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MUNICIPALITY OF SINGAPORE

HEALTH DEPARTMENT

ANNUAL REPORT

FOR

1920

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(I-D)

MUNICIPAL HEALTH OFFICE

To

THE PRESIDENT,

MUNICIPAL COMMISSIONERS.

SIR,

I have the honour to report as follows for the year 1920.

I. ZYMOTIC DISEASE

There were 895 cases notified. Of this total Tuberculosis alone accounted for 520. The notification of Influenza was discontinued in October, 1919.

Year	Small Pox	Plague	Enteric Fever	Cholera	Diphtheria	Erysipelas	Chicken Pox	Puerperal Fever	Paratyphoid Fever	Cerebro Spinal Fever	Influenza	Tuberculosis	Total
1910	415	5	84	132	20	4	...	...	...	...	...	...	660
1911	259	33	152	235	14	3	...	...	...	...	...	...	691
1912	59	38	126	121	13	2	...	...	...	...	...	...	359
1913	19	1	111	97	16	3	...	...	...	...	...	...	247
1914	13	15	109	274	10	1	...	...	...	...	...	...	422
1915	18	34	89	9	15	4	...	...	...	...	...	...	169
1916	70	23	103	13	30	4	127	2	13	...	...	...	385
1917	33	45	120	8	37	4	118	20	4	7	...	...	396
1918	11	176	287	0	31	4	107	8	2	5	1259	104	1994
1919	14	11	174	75	42	3	34	14	3	22	543	866	1801
Average for 10 years	90.6	38.1	135.5	96.4	22.8	3.2	...	...	...	...	...	...	...
1920	4	61	129	33	33	1	68	15	2	29	...	520	895

The following return shows the number of notifiable diseases for each month of the year:—

	January	February	March	April	May	June	July	August	September	October	November	Décember	Total
Enteric Fever ...	7	5	12	8	13	14	25	11	8	9	5	12	129
Diphtheria ...	4	1	2	6	1	1	3	2	2	5	3	3	33
Chicken Pox ...	7	13	21	4	4	6	2	...	1	6	4	...	68
Puerperal Fever	4	...	1	...	1	1	1	...	2	1	3	1	15
Erysipelas ...	...	...	...	...	...	...	...	...	...	...	1	...	1
C. S. Fever ...	2	1	2	...	...	9	2	...	...	...	7	6	29
Tuberculosis ...	54	51	62	35	39	48	48	29	44	32	43	35	520
Paratyphoid Fr.	...	1	...	...	...	...	...	1	...	...	...	...	2
Small Pox ...	...	...	1	1	1	...	1	...	...	...	...	...	4
Plague ...	4	4	12	14	16	5	2	1	1	1	1	...	61
Cholera ...	3	...	4	...	...	...	10	13	2	...	1	...	33
Total ...	85	76	117	68	75	84	94	57	60	54	68	57	895

The following table shows the incidence by nationalities:—

		Europeans	Eurasians	Chinese	Malays	Indians	Others	Total
Enteric Fever		11	2	88	6	9	13	129
Diphtheria		7	3	18	3	...	2	33
Chicken Pox		4	15	20	...	27	2	63
Puerperal Fever	...	...	4	10	...	1	...	15
Erysipelas		...	...	...	1	...	...	1
Cerebro-Spinal Fever	...	...	...	17	4	8	...	29
Tuberculosis		5	8	409	25	63	10	520
Paratyphoid Fever	...	1	...	1	...	...	...	2
Small Pox		...	...	3	1	...	...	4
Plague		...	...	55	2	3	1	61
Cholera		1	...	23	...	7	2	33
Total	...	29	32	644	42	118	30	895

(3-D)

As regards Zymotic disease as a whole nothing calls for special remark with the possible exception of Cerebro Spinal Fever. The number of cases of this disease was the largest yet recorded and there are many indications that would seem to point to even more cases in the future. As each was reported it was carefully investigated but practically no two cases were found to have any connection with each other. It would appear that there must be many healthy "carriers" of the Meningococcus all over the town.

GENERAL

(1) Medical Inspection of Passengers.

96 persons reported for examination while 18 failed to report.

(2) Disinfection of Infected articles. There were 9,130 articles passed through the disinfector of an estimated value of approximately \$9,000. The disinfector was charged on 78 occasions. 302 articles were destroyed as being not worth disinfecting. Their value was estimated at \$28 approx. but compensation was not claimed.

(3) Houses disinfected numbered 139 of which 110 were temporarily in quarantine. At the end of the year 5 still remained in quarantine.

(4) Contacts, etc. 305 contacts were sent to St. Johns, 97 patients removed to hospital, 40 bodies removed for post-mortem and 115 bodies buried under supervision.

(5) Prosecutions. There was one prosecution for failure to report a case of infectious disease. A conviction with a \$25 fine was obtained.

MIDDLETON HOSPITAL

At the end of 1919 there were 3 patients remaining in hospital while during the year there were 182 admissions.

At the end of the year the new Cholera Ward was nearing completion. Owing to the increased number of diseases now admitted to hospital it became evident that even more ward accommodation was required. Accordingly plans have been prepared for two small Observation Wards the erection of which will be carried out during 1921.

Dr. Dawson's report is appended.

VACCINATION

The following return gives the number of Vaccinations performed during the past five years.

Year			Medical Men	Licensed Vaccinators	Municipal Vaccinators	Total
1916	...	...	172	2438	12,217	14,827
1917	...	...	296	2269	4,319	6,884
1918	...	...	170	2669	4,406	7,245
1919	...	...	259	2134	4,647	7,040
1920	...	...	219	2138	4,161	6,518

Of the total number of 4,161 vaccinations at the Municipal Stations 4,135 or 99.37% were successful, 3 modified, 11 unsuccessful and 12 remained to be seen a second time.

The nationalities of those vaccinated by the Municipal Vaccinators were:—Europeans 8, Eurasians 60, Chinese 3,297, Malays 559, Indians 214, and others 23. Of these 2,187 were males and 1,974 females of the following ages.

Under 1 year of age	3512	Between 10 and 20 years	36
Between 1 and 2 years	280	„ 20 „ 30 „	44
„ 2 „ 3 „	102	„ 30 „ 40 „	22
„ 3 „ 4 „	62	„ 40 „ 50 „	4
„ 4 „ 5 „	49	Over 50 years	5
„ 5 „ 10 „	45		

At the Municipal Vaccination Stations there were performed 1960 vaccinations, at Police Stations 1,435, at private Houses 683 and contacts 83.

980 tubes of lymph were used by the Municipal Vaccinators equivalent to an average of 4.24 persons per tube.

VITAL STATISTICS

The following statistics are calculated on an estimated mean annual population of 330,303.

The following return gives the population, the number and rates per 1,000 of births, infantile deaths and deaths at all ages for the last 10 years.

Year	Population	BIRTHS		INFANTILE DEATHS		DEATHS AT ALL AGES	
		No.	Rate	No.	Rate	No.	Rate
1910	249,424	5,383	21.58	1,797	333.8	10,700	42.89
1911	259,610	5,560	21.41	1,921	345.5	13,217	50.91
1912	268,273	5,853	21.81	1,984	338.9	11,270	42.00
1913	275,043	61,91	22.50	1,968	317.8	9,387	34.12
1914	282,076	7,420	26.30	2,174	292.9	9,623	34.11
1915	289,375	7,343	25.37	1,920	261.4	7,928	27.39
1916	296,951	7,688	25.88	2,001	260.2	8,689	29.26
1917	304,815	8,156	26.75	2,447	300.0	10,900	35.75
1918	312,995	8,065	25.76	2,131	264.2	13,172	40.08
1919	321,480	8,535	26.54	2,234	261.7	10,756	33.45
Average 10 years	286,004	7,019	24.39	2,057	297.6	10,564	37.19
1920	330,303	8,969	27.15	2,233	248.9	11,731	35.51

The Birth rate for 1920 was higher than the average for the previous ten years by 2.76 per 1,000 while the infantile Death Rate was lower by 48.7 per 1,000 births and the general Death Rate lower by 1.68 per 1,000 than the average for the previous 10 years.

I. BIRTHS

The total number of births registered during the year was 8,969 compared with 8,535 in 1919 and 8,065 in 1918. There were 4,735 male and 4,234 female births.

The birth rate was 27.15 per mille as compared with 26.54 in 1919 and 25.76 in 1918.

The following return gives the number of births and the birth rate for each month of the year:—

Month		Births	Birth rate	Month		Births	Birth rate
January	...	750	27.24	July	...	766	27.82
February	...	654	23.76	August	...	693	25.17
March	...	763	27.72	September	...	756	27.46
April	...	704	25.57	October	...	748	27.17
May	...	765	27.79	November	...	850	30.88
June	...	694	25.21	December	...	826	30.00

The following return shows the number of births and the birth rate for each nationality:—

		Males	Females	Total	Birth Rate
Europeans	...	81	69	150	21.78
Eurasians	...	90	76	166	34.29
Chinese	...	3,634	3,186	6,820	27.21
Malays	...	611	562	1173	40.59
Indians	...	240	258	498	14.64
Others	...	79	83	162	31.87
Total	...	4,735	4,234	8,969	27.15

There were 308 still births compared with 310 in 1919.

2. DEATHS

The total number of deaths for the year was 11,731 and the death rate 35.51 per 1,000 compared with 33.45 in 1919 and 42.08 in 1918.

844 persons died who had been less than three months resident in Singapore. Deducting these the death rate is reduced to 32.96 per 1,000.

The excess of deaths over births was 2,762 as against 2,221 in 1919.

(6-D)

The following return gives the number of deaths and the death rate for each month of the year:—

Month	Death	Death rate	Month	Death	Death rate
January ...	1120	40.69	July ...	978	35.53
February ...	1013	36.80	August ...	894	32.47
March ...	1054	38.29	September ...	820	29.79
April ...	1045	37.96	October ...	909	33.02
May ...	1145	41.59	November ...	904	32.84
June ...	980	35.60	December ...	869	31.57

MORTALITY BY NATIONALITIES

The following return gives the number of deaths from each cause among males and females of the different nationalities. The classification followed is that of the International list (1912.)

DISEASES		Sex	Europeans	Eurasians	Chinese	Malays	Indians	Others	TOTAL
I. General Diseases :—									
1. Enteric Fever	...	M	3	1	52	2	4	1	63
		F	2	1	12	1	—	1	17
4. Malaria	...	M	6	1	1031	184	146	9	1377
		F	—	—	225	94	18	5	342
5. Small Pox	...	M	—	—	1	—	—	—	1
		F	—	—	1	—	—	—	1
6. Measles	...	M	—	—	2	—	—	—	2
		F	—	—	2	—	—	1	3
8. Whooping Cough	...	M	—	—	1	—	—	—	1
		F	—	1	1	—	—	—	2
9-A. Diphtheria	...	M	—	—	3	1	2	1	7
		F	—	—	4	—	—	—	4
10. Influenza	...	M	5	2	99	52	24	5	187
		F	1	5	83	37	4	2	132
12. Asiatic Cholera	...	M	—	—	22	—	6	4	32
		F	—	—	—	—	—	—	0
14. Dysentery	...	M	1	—	487	45	54	4	591
		F	1	1	79	20	11	1	113
15. Plague	...	M	—	—	41	1	3	1	46
		F	—	—	8	1	—	—	9
17. Leprosy	...	M	—	—	14	—	1	—	15
		F	—	1	3	—	—	—	4
20-A. Pyaemia	...	M	—	1	3	—	1	—	5
		F	—	—	1	—	—	—	1
20-B. Septicaemia	...	M	1	—	24	1	1	1	28
		F	—	1	—	—	—	—	1
24. Tetanus	...	M	—	—	45	1	1	—	47
		F	—	—	59	2	—	—	61
27. Beri beri	...	M	—	—	519	15	7	1	542
		F	—	—	82	11	—	4	97
28-A. Pulmonary Tuberculosis	..	M	3	4	221	8	34	8	278
		F	—	3	72	3	2	6	86
28-B. Phthisis	...	M	—	3	952	75	38	12	1080
		F	1	6	246	41	24	2	320
29-B. Miliary Tuberculosis	...	M	—	—	—	2	—	—	2
		F	—	—	—	—	—	—	0
30. Tuberculous Meningitis	...	M	—	—	11	—	1	—	12
		F	—	—	5	—	1	—	6
31-A. Tabes Mesenterica	...	M	—	—	1	—	—	—	1
		F	—	—	—	—	—	—	0
31-B. Other peritoneal and intestinal tubercle	...	M	—	1	5	1	1	2	10
		F	—	—	4	—	1	2	7
32. Tuberculosis of spinal column	{	M	—	—	1	—	2	—	3
		F	—	—	1	—	—	—	1
33. Tuberculosis of joints	...	M	—	—	4	—	—	—	4
		F	—	—	1	1	—	—	2
34-C. Other tuberculosis included under 34	...	M	—	—	1	—	—	—	1
		F	—	—	—	—	—	—	0
35. Disseminated tuberculosis	...	M	—	—	12	—	—	—	12
		F	—	1	10	—	—	—	11
37. Syphilis	...	M	—	1	65	1	1	1	69
		F	—	—	34	2	—	1	37

DISEASES	Sex	Europeans	Eurasians	Chinese	Malays	Indians	Others	TOTAL
38-A. Soft Chancre ...	M	—	—	1	—	—	—	1
	F	—	—	—	—	—	—	0
38-B. Gonococcus infection ...	M	—	—	—	—	1	—	1
39. Cancer of the buccal cavity	M	—	—	1	1	1	—	3
	F	—	—	—	—	—	—	0
40. Cancer of the stomach, liver, etc. ...	M	—	1	41	2	1	1	46
	F	—	1	4	3	—	—	8
41. Cancer of the peritoneum, intestines and rectum ...	M	—	—	3	—	—	—	3
	F	—	—	—	—	—	—	0
42. Cancer of the female genital organs ...	F	2	1	7	—	2	—	12
43. Cancer of the breast ...	F	—	1	9	—	—	2	12
44. Cancer of the skin ...	M	—	—	1	1	—	—	2
	F	—	—	1	—	—	—	1
45. Cancer of other or unspecified organs ...	M	—	—	10	—	—	—	10
	F	—	—	3	—	1	1	5
46-C. Other tumours ...	M	—	1	1	—	—	—	2
	F	—	—	—	—	—	—	0
47. Rheumatic fever ...	M	—	—	1	—	—	—	1
	F	—	—	1	—	—	—	1
48-A. Chronic Rheumatism ...	M	—	1	36	9	—	—	46
	F	—	—	15	6	3	—	24
50. Diabetes ...	M	—	1	6	1	2	—	10
	F	—	—	1	—	—	—	1
54. Anaemia ...	M	1	—	2	—	—	—	3
	F	1	—	1	—	—	—	2
55-D. Other diseases included under 55 ...	M	—	—	—	—	—	—	0
	F	—	—	2	—	—	—	2
56. Alcoholism ...	M	—	—	1	—	1	—	2
	F	—	—	—	—	—	—	0
59. Other chronic poisonings ...	M	—	—	5	—	—	—	5
	F	—	—	—	—	—	—	0
II. Diseases of the Nervous System and of the Organs of Special Sense :—								5876
60. Encephalitis ...	M	—	—	1	—	—	—	1
	F	—	—	—	—	—	—	0
61-A. Cerebro spinal fever ...	M	—	—	13	2	5	—	20
	F	—	—	—	—	—	—	0
61-B. Posterior basal meningitis	M	—	—	—	—	—	—	0
	F	—	—	1	—	—	—	1
61-C. Meningitis-other forms ...	M	2	—	9	1	3	—	15
	F	—	—	3	—	—	—	3
63-B. Other diseases of the spinal cord* ...	M	—	—	—	1	—	—	1
	F	—	—	—	—	—	—	0
64-A. Apoplexy ...	M	—	—	3	—	5	—	8
	F	—	—	2	1	—	1	4
64-B. Serous apoplexy & Oedema of brain ...	M	—	—	1	—	—	—	1
	F	—	—	—	—	—	—	0
64-E. Cerebral haemorrhage ...	M	1	3	15	2	1	—	22
	F	—	1	10	2	—	—	13

DISEASES			Sex	Europeans	Eurians	Chinese	Malays	Indians	Others	TOTAL		
65.	Softening of brain	...	M	—	—	5	—	—	—	5	}	5
			F	—	—	—	—	—	—	0		
66-A.	Hemiplegia	...	M	—	I	3	4	—	—	8	}	21
			F	I	—	7	I	4	—	13		
66-B.	Paraplegia	...	M	—	I	6	—	—	—	7	}	14
			F	—	—	6	—	I	—	7		
66-C.	Other forms of paralysis	...	M	—	—	—	—	—	—	0	}	2
			F	I	—	I	—	—	—	2		
67.	General paralysis of the insane	...	M	—	—	10	2	—	—	12	}	13
			F	—	—	I	—	—	—	I		
68.	Other forms of mental alienation	...	M	4	—	—	I	—	—	5	}	5
			F	—	—	—	—	—	—	0		
69.	Epilepsy	...	M	—	I	2	I	—	—	4	}	6
			F	—	I	I	—	—	—	2		
71.	Infantile convulsions	...	M	—	3	322	65	25	—	415	}	749
			F	—	I	245	67	18	3	334		
73-B.	Neuritis	...	M	—	—	I	3	I	—	5	}	16
			F	—	—	3	6	I	I	11		
74-C.	Cerebral tumour	...	M	—	—	I	—	—	—	I	}	2
			F	—	—	I	—	—	—	I		
76-A.	Mastoid abscess	...	M	—	—	I	—	—	—	I	}	I
			F	—	—	—	—	—	—	0		
76-B.	Other diseases of the ears	...	M	—	—	I	—	—	—	I	}	I
			F	—	—	—	—	—	—	0		
III. Diseases of the Circulatory System :—												924
77.	Pericarditis	...	M	—	—	11	—	2	—	13	}	13
			F	—	—	—	—	—	—	0		
78-A.	Acute myocarditis	...	M	—	—	3	—	—	—	3	}	5
			F	—	—	I	I	—	—	2		
78-B.	Infective endocarditis	...	M	—	—	2	—	—	—	2	}	3
			F	—	—	—	I	—	—	I		
79.	(A.B.C.) Organic disease of heart :—											
79-A.	Valvular disease	...	M	I	2	54	2	5	3	67	}	91
			F	—	I	22	—	—	I	24		
79-B.	Fatty degeneration of heart	...	M	I	—	I	—	I	—	3	}	3
			F	—	—	—	—	—	—	0		
79-C.	Other organic disease of the heart	...	M	I	—	10	I	—	—	12	}	13
			F	—	—	I	—	—	—	I		
80.	Angina Pectoris	...	M	2	—	—	—	I	—	3	}	3
			F	—	—	—	—	—	—	0		
81.	(A.B.C.) Diseases of the arteries, Atheroma, Aneurism, etc.											
81-A.	Aneurism	...	M	—	—	8	—	I	—	9	}	10
			F	—	—	I	—	—	—	I		
81-B.	Arterial Sclerosis	...	M	—	—	5	I	I	—	7	}	10
			F	—	—	2	—	I	—	3		
81-C.	Other diseases of arteries	...	M	—	—	6	I	—	—	7	}	7
			F	—	—	—	—	—	—	0		
82-A.	Cerebral Embolism and thrombosis	...	M	—	—	—	—	I	—	I	}	3
			F	—	—	I	I	—	—	2		
85-C.	Other diseases of the circulatory system	...	M	—	—	2	—	I	—	3	}	4
			F	—	—	I	—	—	—	I		
												165

DISEASES	Sex	Europeans	Eurasians	Chinese	Malays	Indians	Others	TOTAL
IV. Diseases of the Respiratory System :—								
87-A. Laryngismus stridulus ...	M	—	—	1	—	—	—	1
	F	—	—	1	—	—	—	1
87-B. Laryngitis ...	M	—	—	2	—	—	—	2
	F	—	—	—	—	—	—	0
89. & 90 (A.B.) Bronchitis—								
A. Bronchiectasis, Bronchial catarrh, etc. ...	M	—	—	1	—	—	—	1
	F	—	—	—	—	—	—	0
B. Other Bronchitis ...	M	1	2	123	22	7	1	156
	F	—	3	109	31	6	5	154
91. Broncho-pneumonia ...	M	2	5	239	32	61	4	343
	F	—	2	147	31	13	1	194
92. (A.B.) Pneumonia, lobar and undefined—								
A. Lobar pneumonia ...	M	3	3	204	51	61	1	323
	F	—	1	63	23	7	1	95
B. Pneumonia (type not stated) ...	M	1	4	295	34	34	—	368
	F	1	1	134	15	5	4	160
93. (A.B.) Pleurisy—								
A. Empyema ...	M	—	—	13	1	3	—	17
	F	—	—	—	—	—	—	0
B. Other pleurisy ...	M	—	1	4	—	—	—	5
	F	—	—	—	—	—	—	0
94-B. Pulmonary Oedema and Congestion ...	M	—	—	—	—	—	—	0
	F	—	—	1	—	—	—	1
94-C. Hypostatic pneumonia ...	M	—	—	2	—	—	—	2
	F	—	—	—	—	—	—	0
95. Gangrene of lung ...	M	—	—	12	—	—	—	12
	F	—	—	—	—	—	—	0
96. Asthma ...	M	—	—	1	—	2	—	3
	F	—	—	4	—	—	—	4
98-B. Other disease of the respiratory system ...	M	—	—	3	2	—	—	5
	F	—	—	1	—	—	—	1
								1848
V. Diseases of the Digestive System :—								
99-A. Diseases of the teeth and gums ...	M	—	—	2	—	—	—	2
	F	—	—	—	—	—	—	0
99-C. Parotitis ...	M	—	—	1	—	—	—	1
	F	—	—	—	—	—	—	0
99-D. Other diseases of mouth and annexa ...	M	—	—	1	—	—	—	1
	F	—	—	—	—	—	—	0
100-A. Tonsillitis ...	M	—	—	1	2	—	—	3
	F	—	—	—	—	—	—	0
100-B. Ludwig's Angina ...	M	—	—	1	—	—	—	1
	F	—	—	—	—	—	—	0
101. Diseases of the oesophagus	M	—	—	1	—	—	—	1
	F	—	—	—	—	1	—	1
102. Perforating ulcer of stomach	M	—	—	18	—	1	—	19
	F	—	—	4	—	—	—	4

DISEASES	Sex	Europeans	Eurians	Chinese	Malays	Indians	Others	TOTAL
103-A. Inflammation of stomach	M	—	1	21	18	4	1	45
	F	—	—	10	11	3	2	26
103-B. Other diseases of the stomach ...	M	—	—	4	—	—	—	4
	F	—	—	2	—	—	—	2
104-B. & 105-B. Diarrhoea ...	M	1	1	103	2	4	1	112
	F	—	4	56	2	4	1	67
104-C. & 105-C. Enteritis (not re- turned as infective) ...	M	—	2	2	—	—	—	4
	F	—	—	4	—	1	—	5
104-D. & 105-D. Gastro-enteritis...	M	1	—	175	16	14	—	206
	F	—	2	149	17	4	4	176
106-D. Ankylostomiasis ...	M	—	—	32	1	20	—	53
	F	—	—	—	—	3	—	3
107. Other intestinal parasites...	M	—	—	—	—	—	—	0
	F	—	—	2	—	—	—	2
108. Appendicitis ...	M	1	—	11	1	3	4	20
	F	1	—	6	1	—	1	9
109. (A.B.) Hernia, intestinal obstruction—								
A. Hernia ...	M	—	—	2	1	3	—	6
	F	—	—	—	1	—	—	1
B. Intestinal obstruction ...	M	1	—	8	—	1	—	10
	F	—	—	2	1	—	—	3
110. Other diseases of the in- testines ...	M	2	—	1	—	2	—	5
	F	1	—	—	—	4	—	5
113-A. Cirrhosis of liver ...	M	2	—	52	2	2	—	58
	F	—	—	7	—	—	—	7
114. Biliary calculi ...	M	—	—	1	—	1	—	2
	F	—	—	—	—	—	—	0
115. Other diseases of liver ...	M	—	—	15	—	4	—	19
	F	—	—	—	—	—	1	1
116-B. Other diseases of the spleen ...	M	—	—	12	—	1	—	13
	F	—	—	1	1	—	—	2
117. Peritonitis (cause unstated)	M	1	—	18	—	3	—	22
	F	—	—	3	—	—	—	3
118-A. Abdominal abscess, sub- phrenic abscess ...	M	—	—	—	—	—	—	0
	F	—	—	1	—	—	—	1
118-B. Other diseases included under 118 ...	M	—	1	—	—	—	1	2
	F	—	—	1	—	—	—	1
VI. Non-Venereal Diseases of the Genito-Urinary System and Annexa:—								928
119. Acute Nephritis ...	M	—	1	20	3	4	2	30
	F	—	1	4	3	—	1	9
120-A. Bright's disease ...	M	—	—	136	2	9	3	150
	F	—	1	53	2	4	4	64
120-B. Nephritis and Uraemia ...	M	—	—	3	1	—	—	4
	F	—	—	2	1	1	—	4
122-C. Suppression of Urine ...	M	—	—	—	—	—	—	0
	F	—	—	1	—	—	—	1
122-D. Other diseases of kidney and annexa ...	M	1	—	8	—	—	—	9
	F	—	—	—	—	—	1	1

DISEASES	Sex	Europeans	Eurasians	Chinese	Malays	Indians	Others	TOTAL	
123. Calculi of the urinary passages ...	M F	— —	1 —	— —	— —	— —	— —	1 0	1
124. Diseases of the bladder ...	M F	— —	— —	9 —	1 —	2 —	— —	12 0	12
125-B. Other diseases of urethra, etc. ...	M F	1 —	— —	5 —	— —	1 —	— —	7 0	7
127. Non-venereal diseases of male genital organs ...	M	1	—	2	—	—	—	3	3
129. Uterine tumour (non cancerous) ...	F	—	—	2	—	—	—	2	2
130-B. Other diseases of the uterus ...	F	—	—	1	—	—	—	1	1
131. Ovarian cyst, tumour (non cancerous) ...	F	—	—	1	—	—	—	1	1
132-B. Other diseases of the female genital organs...	F	—	—	1	—	—	—	1	1
									300
VII. The Puerperal State:—									
134-A. Abortion ...	F	—	—	1	1	—	—	2	2
134-B. Haemorrhage of pregnancy ...	F	1	—	3	—	—	—	4	4
134-C. Uncontrollable vomiting ...	F	1	—	—	—	—	—	1	1
135. Puerperal haemorrhage ...	F	—	—	7	3	1	—	11	11
136. Other accidents of child-birth ...	F	—	—	5	5	2	—	12	12
137. Puerperal fever ...	F	—	1	6	1	2	—	10	10
138-A. Puerperal nephritis and Uraemia ...	F	—	—	1	—	—	—	1	1
138-C. Puerperal convulsions ...	F	—	—	5	4	1	—	10	10
									51
VIII. Diseases of the Skin and of the Cellular Tissue:—									
142-A. Senile gangrene ...	M F	— —	— —	1 —	— —	— —	— —	1 0	1
142-B. Noma, gangrene of mouth ...	M F	— —	— —	2 —	— 1	— 1	1 —	3 2	5
142-C. Noma pudendi ...	M F	— —	— —	1 —	1 —	— —	— —	2 0	2
142-D. Other gangrene ...	M F	— —	— —	20 4	4 —	1 —	— —	25 4	29
143. Carbuncle, Boil ...	M F	— —	— —	2 —	1 —	1 —	1 1	5 1	6
144-A. Phlegmon ...	M F	— —	1 —	23 1	1 —	2 —	— —	27 1	28
144-B. Acute abscess ...	M F	— —	— —	5 9	— 2	1 —	— —	6 11	17

DISEASES	Sex	Europeans	Eurians	Chinese	Malays	Indians	Others	TOTAL
145-A. Ulcer, Bedsore ...	M	—	—	14	1	4	—	19
	F	—	—	2	—	—	—	2
145-C. Pemphigus ...	M	—	—	1	—	—	—	1
	F	—	—	—	—	—	—	0
145-D. Other diseases of the integumentary system ...	M	—	—	1	1	—	—	2
	F	—	—	—	1	—	—	1
								113
IX. Diseases of the Bones and of the Organs of Locomotion:—								
146. Diseases of the bones ...	M	—	—	4	1	1	—	6
	F	—	—	3	1	—	—	4
147. Diseases of the joints ...	M	—	—	8	—	1	—	9
	F	—	—	—	—	—	—	0
X. Malformations:—								19
150-A. Congenital hydrocephalus	M	—	—	1	—	—	—	1
	F	—	—	—	—	—	—	0
150-C. Congenital malformation of heart ...	M	—	—	1	—	—	—	1
	F	—	—	—	—	—	—	0
								2
XI. Diseases of Early Infancy:—								
151-A. Premature birth ...	M	2	—	61	3	4	2	72
	F	2	2	49	3	4	1	61
151-B. Infantile atrophy, debility and marasmus ...	M	—	—	43	8	5	—	56
	F	—	—	41	9	2	—	52
151-C. Icterus Neonatorum ...	M	—	—	1	—	—	—	1
	F	—	—	—	—	—	—	0
152-B. Atelectasis ...	M	—	—	14	—	1	—	15
	F	—	—	9	—	—	—	9
152-C. Injuries at birth ...	M	—	—	1	—	—	—	1
	F	—	—	—	—	—	—	0
XII. Old Age:—								267
154-B. Senile Decay ...	M	—	1	121	27	3	2	154
	F	—	—	77	25	14	1	117
XIII. Affections Produced by External Causes:—								271
155. Suicide by poison ...	M	—	—	1	—	—	—	1
	F	—	—	—	—	—	—	0
157. Suicide by hanging or strangulation ...	M	1	—	28	—	2	—	31
	F	—	—	5	—	—	—	5
159. Suicide by firearms ...	M	1	—	—	—	—	—	1
	F	—	—	—	—	—	—	0
160. Suicide by cutting or piercing instruments ...	M	—	—	2	—	—	—	2
	F	—	—	1	—	—	—	1
164. Poisoning by food ...	M	—	—	1	—	—	—	1
	F	—	—	—	—	—	—	0
165. Other acute poisonings ...	M	—	—	1	—	—	—	1
	F	—	—	—	—	—	—	0
167. Burns ...	M	—	—	5	1	2	—	8
	F	—	—	5	—	—	1	6
168. Absorption of deleterious gases ...	M	—	—	1	—	—	—	1
	F	—	—	1	—	—	—	1
169. Accidental drowning ...	M	1	—	28	1	3	—	33
	F	1	—	1	—	—	—	2

DISEASES			Sex	Europeans	Eurasians	Chinese	Malays	Indians	Others	TOTAL		
170.	Injury by firearms	...	M	—	—	1	1	—	—	2	}	2
			F	—	—	—	—	—	—	0		
171.	Injury by cutting or pier-	...	M	—	—	1	—	—	—	1	}	1
	cing instruments		F	—	—	—	—	—	—	0		
182.	Homicide by firearms	...	M	—	—	1	—	—	—	1	}	1
			F	—	—	—	—	—	—	0		
183.	Homicide by cutting or pier-	...	M	—	—	13	3	1	—	17	}	21
	cing instruments		F	—	—	3	1	—	—	4		
185.	Fractures	...	M	1	—	44	2	10	—	57	}	64
			F	—	—	7	—	—	—	7		
186.	Other violence	...	M	1	—	26	—	6	—	33	}	36
			F	—	1	2	—	—	—	3		
XIV. Ill-Defined Causes:—												219
187.	Dropsy	...	M	—	—	66	3	—	—	69	}	101
			F	—	—	25	5	2	—	32		
189-A.	Heart failure	...	M	—	1	1	—	—	—	2	}	7
			F	—	—	5	—	—	—	5		
189-B.	Atrophy, debility, maras-	...	M	1	1	35	18	6	1	62	}	126
	mus		F	—	2	40	15	6	1	64		
189-D.	Pyrexia	...	M	—	—	216	1	1	—	218	}	402
			F	—	—	181	3	—	—	184		
189-E.	Other ill-defined deaths		M	—	—	50	2	6	—	58	}	62
			F	—	—	4	—	—	—	4		
189-F.	Cause not specified	...	M	—	—	38	—	3	2	43	}	50
			F	—	—	7	—	—	—	7		
Total males			—	59	55	6,671	762	697	81	8,325	}	11,731
Total females			—	18	48	2,570	522	183	65	3,406		
Grand Total			—	77	103	9,241	1,284	880	146			11,731

The death rates for the different nationalities were :—

	1920			1919		
	Males	Females	Total	Males	Females	Total
Europeans	11.82	9.49	11.18	11.03	4.88	9.32
Eurasians	23.90	18.90	21.28	22.33	20.71	21.48
Chinese	40.16	30.42	36.87	38.23	27.77	34.78
Malays	52.17	36.52	40.59	42.78	32.54	37.75
Indians	24.47	33.10	14.64	24.49	39.36	26.93
Others	31.62	25.77	31.87	40.87	19.63	30.31
Total	38.00	30.61	35.51	36.04	28.24	33.45

The following return gives the death rates per 1,000 of each nationality from each group of diseases:—

	Europeans	Eurasians	Chinese	Malays	Indians	Others
General Diseases	4.0	8.4	10.7	21.5	11.7	15.5
Diseases of Nervous System ...	1.3	2.4	2.6	5.5	1.8	0.9
Do. Circulatory System ...	0.7	0.6	0.5	0.2	0.4	0.7
Do. Respiratory System ...	1.1	4.5	5.4	8.3	5.8	3.3
Do. Digestive System ...	1.5	2.2	2.9	2.6	2.4	5.5
Do. Genito Urinary System	0.4	0.8	0.9	0.4	0.6	2.1
Do. Early Infancy ...	0.5	0.4	0.8	0.7	0.4	0.5
Ill-defined causes	0.1	0.8	2.6	1.6	0.7	0.7

MORTALITY IN RELATION TO AGE AND SEX

The following return shows the number of deaths from each cause in the different age periods for each sex :—

DISEASES			Sex	Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years	Unknown	TOTAL	
I. General Diseases :—																	
1. Enteric Fever	...	...	M	—	—	—	1	1	2	18	22	12	6	1	—	63	80
			F	—	—	—	—	8	1	5	2	—	1	—	—	17	
4. Malaria	...	...	M	3	9	30	32	29	79	134	413	349	221	76	2	1377	1719
			F	3	2	17	45	32	18	31	79	50	46	19	—	342	
5. Small Pox	...	...	M	—	—	—	—	—	—	—	—	—	1	—	—	1	2
			F	—	—	—	—	—	—	1	—	—	—	—	—	1	
6. Measles	...	...	M	1	—	—	1	—	—	—	—	—	—	—	—	2	5
			F	—	—	2	—	1	—	—	—	—	—	—	—	3	
8. Whooping Cough	...	...	M	—	—	—	1	—	—	—	—	—	—	—	—	1	3
			F	—	1	1	—	—	—	—	—	—	—	—	—	2	
9-A. Diphtheria	...	...	M	—	1	2	2	—	—	1	1	—	—	—	—	7	11
			F	—	—	3	1	—	—	—	—	—	—	—	—	4	
10. Influenza	...	...	M	3	9	16	12	9	12	19	33	32	23	19	—	187	319
			F	—	5	10	17	8	8	13	17	15	16	23	—	132	
12. Asiatic Cholera	...	...	M	—	—	—	2	—	1	4	10	9	2	1	3	32	32
			F	—	—	—	—	—	—	—	—	—	—	—	—	0	
14. Dysentery	...	...	M	—	1	19	6	10	7	32	152	136	139	88	1	591	704
			F	—	1	15	17	6	2	6	17	15	15	19	—	113	
15. Plague	...	...	M	—	—	—	3	2	2	3	11	15	5	5	—	46	55
			F	—	—	—	1	1	1	1	1	2	2	—	—	9	
17. Leprosy	...	...	M	—	—	—	—	1	—	1	—	6	4	3	—	15	19
			F	—	—	—	—	—	1	2	—	—	1	—	—	4	
20-A. Pyaemia	...	...	M	1	—	—	—	—	—	—	3	—	1	—	—	5	6
			F	—	—	—	—	—	—	1	—	—	—	—	—	1	
20-B. Septicaemia	...	...	M	1	—	—	1	—	—	1	7	8	6	4	—	28	29
			F	—	—	—	—	—	—	—	—	—	1	—	—	1	
24. Tetanus	...	...	M	40	—	—	—	2	—	1	4	—	—	—	—	47	108
			F	59	—	—	—	—	—	—	1	—	—	1	—	61	
27. Beri beri	...	...	M	—	—	—	3	1	7	47	153	168	131	32	—	542	639
			F	—	—	—	1	4	8	8	32	20	20	4	—	97	
28-A. Pulmonary Tuberculosis	...	...	M	—	—	4	4	—	3	20	78	88	62	18	1	278	364
			F	—	—	3	2	3	—	8	29	25	9	7	—	86	
28-B. Phthisis	...	...	M	—	—	6	3	2	11	44	260	316	280	158	—	1080	1400
			F	—	—	4	4	2	7	24	104	84	56	35	—	320	
29-B. Miliary Tuberculosis	...	...	M	—	—	—	—	—	—	—	—	1	1	—	—	2	2
			F	—	—	—	—	—	—	—	—	—	—	—	—	0	
30. Tuberculous Meningitis	...	...	M	—	1	4	1	1	—	1	2	2	—	—	—	12	18
			F	—	—	4	—	1	—	1	—	—	—	—	—	6	
31-A. Tabes Mesenterica	...	...	M	—	1	—	—	—	—	—	—	—	—	—	—	1	1
			F	—	—	—	—	—	—	—	—	—	—	—	—	0	
31-B. Other peritoneal and intestinal tubercle	...	...	M	—	—	—	—	—	—	1	4	5	—	—	—	10	17
			F	—	—	1	—	—	—	2	3	1	—	—	—	7	
32. Tuberculosis of spinal column	...	...	M	—	—	—	1	—	—	1	—	1	—	—	—	3	4
			F	—	—	—	1	—	—	—	—	—	—	—	—	1	
33. Tuberculosis of joints	...	...	M	—	—	—	—	1	—	—	—	2	1	—	—	4	6
			F	—	—	—	2	—	—	—	—	—	—	—	—	2	
34-C. Other tuberculosis included under 34	...	...	M	—	—	—	—	—	—	1	—	—	—	—	—	1	1
			F	—	—	—	—	—	—	—	—	—	—	—	—	0	
35. Disseminated tuberculosis	...	...	M	—	—	1	—	—	—	2	3	4	2	—	—	12	23
			F	—	1	8	1	—	—	—	—	1	—	—	—	11	
37. Syphilis	...	...	M	16	5	1	—	—	—	3	13	22	7	2	—	69	106
			F	25	4	4	—	—	—	1	2	1	—	—	—	37	

DISEASES		Sex	Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years	Unknown	TOTAL
38-A.	Soft Chancre ...	M	—	—	—	—	—	—	—	—	—	1	—	—	1
		F	—	—	—	—	—	—	—	—	—	—	—	—	0
38-B.	Gonococcus infection ...	M	—	—	—	—	—	—	1	—	—	—	—	—	1
39.	Cancer of the buccal cavity	M	—	—	—	—	—	—	—	—	1	2	—	—	3
		F	—	—	—	—	—	—	—	—	—	—	—	—	0
40.	Cancer of the stomach, liver, etc. ...	M	—	—	—	—	—	—	—	5	14	21	6	—	46
		F	—	—	—	—	—	—	—	—	—	3	5	—	8
41.	Cancer of the peritoneum, intestines and rectum ...	M	—	—	—	—	—	—	—	—	1	2	—	—	3
		F	—	—	—	—	—	—	—	—	—	—	—	—	0
42.	Cancer of the female genital organs ...	F	—	—	—	—	—	—	—	2	6	4	—	—	12
43.	Cancer of the breast ...	F	—	—	—	—	—	—	—	—	3	6	3	—	12
44.	Cancer of the skin ...	M	—	—	—	—	—	—	—	—	—	2	—	—	2
		F	—	—	—	—	—	—	—	—	—	—	1	—	1
45.	Cancer of other or unspecified organs ...	M	—	—	—	—	—	—	—	3	1	6	—	—	10
		F	—	—	—	—	—	—	—	1	1	1	2	—	5
46-C.	Other tumours ...	M	1	—	—	—	—	—	1	—	—	—	—	—	2
		F	—	—	—	—	—	—	—	—	—	—	—	—	0
47.	Rheumatic fever ...	M	—	—	1	—	—	—	—	—	—	—	—	—	1
		F	—	—	—	—	—	—	1	—	—	—	—	—	1
48-A.	Chronic Rheumatism ...	M	—	—	—	—	—	—	—	2	—	2	42	—	46
		F	—	—	—	—	1	—	—	—	1	1	21	—	24
50.	Diabetes ...	M	—	—	—	—	—	—	—	—	2	5	3	—	10
		F	—	—	—	—	—	—	—	—	—	1	—	—	1
54.	Anaemia ...	M	—	—	—	—	—	—	—	1	1	—	1	—	3
		F	—	—	—	—	1	—	—	—	—	1	—	—	2
55-D.	Other diseases included under 55 ...	M	—	—	—	—	—	—	—	—	—	—	—	—	0
		F	—	—	2	—	—	—	—	—	—	—	—	—	2
56.	Alcoholism ...	M	—	—	—	—	—	—	—	—	1	1	—	—	2
		F	—	—	—	—	—	—	—	—	—	—	—	—	0
59.	Other chronic poisonings ...	M	—	—	—	—	—	—	—	—	—	—	—	—	0
		F	—	—	—	—	—	—	—	1	—	3	1	—	5
															5876
II. Diseases of the Nervous System and of the Organs of Special Sense :—															
60.	Encephalitis ...	M	—	—	—	—	—	—	—	1	—	—	—	—	1
		F	—	—	—	—	—	—	—	—	—	—	—	—	0
61-A.	Cerebro spinal fever ...	M	—	—	—	—	—	—	7	6	5	2	—	—	20
		F	—	—	—	—	—	—	—	—	—	—	—	—	0
61-B.	Posterior basal meningitis	M	—	—	—	—	—	—	—	—	—	—	—	—	0
		F	—	—	1	—	—	—	—	—	—	—	—	—	1
61-C.	Meningitis-other forms ...	M	—	2	—	—	1	1	—	3	3	4	—	1	15
		F	—	—	1	—	—	—	—	2	—	—	—	—	3
63-B.	Other diseases of the spinal cord ...	M	1	—	—	—	—	—	—	—	—	—	—	—	1
		F	—	—	—	—	—	—	—	—	—	—	—	—	0
64-A.	Apoplexy ...	M	—	—	—	—	—	—	—	—	2	5	1	—	8
		F	—	—	—	—	—	—	—	—	—	2	2	—	4
64-B.	Serous apoplexy & Oedema of brain ...	M	—	—	—	—	—	—	—	—	—	1	—	—	1
		F	—	—	—	—	—	—	—	—	—	—	—	—	0
64-E.	Cerebral haemorrhage ...	M	—	—	—	—	—	—	—	4	5	6	7	—	22
		F	—	—	—	—	—	—	—	1	2	4	6	—	13

DISEASES			Sex	Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years	Unknown	TOTAL		
65.	Softening of brain	...	M	—	—	—	—	—	—	—	1	2	1	1	—	5	}	5
			F	—	—	—	—	—	—	—	—	—	—	—	—	0		
66-A.	Hemiplegia	...	M	—	—	—	—	—	—	—	1	1	2	4	—	8	}	21
			F	—	—	—	—	—	—	—	—	—	4	9	—	13		
66-B.	Paraplegia	...	M	—	—	—	—	—	—	—	1	1	5	—	—	7	}	14
			F	—	—	—	—	—	—	—	2	—	1	4	—	7		
66-C.	Other forms of paralysis	...	M	—	—	—	—	—	—	—	—	—	—	—	—	0	}	2
			F	—	—	—	—	—	—	1	—	1	—	—	—	2		
67.	General paralysis of the insane	...	M	—	—	—	—	—	—	—	1	7	3	1	—	12	}	13
			F	—	—	—	—	—	—	—	—	1	—	—	—	1		
68.	Other forms of mental alienation	...	M	—	—	—	—	—	1	1	1	1	1	—	—	5	}	5
			F	—	—	—	—	—	—	—	—	—	—	—	—	0		
69.	Epilepsy	...	M	—	—	—	—	—	1	—	1	1	—	1	—	4	}	6
			F	—	—	—	—	—	1	—	—	—	—	1	—	2		
71.	Infantile convulsions	...	M	161	172	77	5	—	—	—	—	—	—	—	—	415	}	749
			F	150	110	72	2	—	—	—	—	—	—	—	—	334		
73-B.	Neuritis	...	M	—	—	—	—	—	—	1	2	—	—	2	—	5	}	16
			F	—	—	—	—	—	—	1	2	6	1	1	—	11		
74-C.	Cerebral tumour	...	M	—	—	—	—	—	—	—	—	1	—	—	—	1	}	2
			F	—	—	—	—	—	—	—	—	—	1	—	—	1		
76-A.	Mastoid abscess	...	M	—	—	—	—	—	—	1	—	—	—	—	—	1	}	1
			F	—	—	—	—	—	—	—	—	—	—	—	—	0		
76-B.	Other diseases of the ears...	...	M	1	—	—	—	—	—	—	—	—	—	—	—	1	}	1
			F	—	—	—	—	—	—	—	—	—	—	—	—	0		
III. Diseases of the Circulatory System:—																	924	
77.	Pericarditis	...	M	—	—	—	—	—	2	1	1	7	1	1	—	13	}	13
			F	—	—	—	—	—	—	—	—	—	—	—	—	0		
78-A.	Acute myocarditis	...	M	—	—	—	—	—	—	—	1	1	1	—	—	3	}	5
			F	—	—	—	—	—	—	—	—	—	1	1	—	2		
78-B.	Infective endocarditis	...	M	—	—	—	—	—	—	1	1	—	—	—	—	2	}	3
			F	—	—	—	—	—	—	—	1	—	—	—	—	1		
79.	(A.B.C.) Organic disease of heart:—																	
79-A.	Valvular disease	...	M	—	—	—	—	—	1	—	11	25	20	10	—	67	}	91
			F	—	—	—	—	—	1	2	3	2	7	9	—	24		
79-B.	Fatty degeneration of heart	...	M	—	—	—	—	—	—	—	—	1	1	1	—	3	}	3
			F	—	—	—	—	—	—	—	—	—	—	—	—	0		
79-C.	Other organic disease of heart	...	M	—	—	—	—	—	—	1	1	6	4	—	—	12	}	13
			F	—	—	—	—	—	—	—	1	—	—	—	—	1		
80.	Angina Pectoris	...	M	—	—	—	—	—	—	—	—	—	1	2	—	3	}	3
			F	—	—	—	—	—	—	—	—	—	—	—	—	0		
81.	(A.B.C.) Diseases of the arteries, Atheroma, Aneurism, etc.—																	
81-A.	Aneurism	...	M	—	—	—	—	—	—	—	—	4	3	2	—	9	}	10
			F	—	—	—	—	—	—	—	—	—	1	—	—	1		
81-B.	Arterial Sclerosis	...	M	—	—	—	—	—	—	—	—	—	5	2	—	7	}	10
			F	—	—	—	—	—	—	—	—	—	2	1	—	3		
81-C.	Other diseases of arteries...	...	M	—	—	—	—	—	—	—	1	4	1	1	—	7	}	7
			F	—	—	—	—	—	—	—	—	—	—	—	—	0		
82-A.	Cerebral Embolism and thrombosis	...	M	—	—	—	—	—	—	—	—	—	1	—	—	1	}	3
			F	—	—	—	—	—	—	—	—	1	—	1	—	2		
85-C.	Other diseases of the circulatory system	...	M	—	—	—	—	—	—	—	2	1	—	—	—	3	}	4
			F	—	—	—	—	—	—	—	—	—	—	1	—	1		
																	165	

DISEASES		Sex	Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years	Unknown	TOTAL	
IV. Diseases of the Respiratory System :—																
87-A.	Laryngismus stridulus ...	M	—	—	1	—	—	—	—	—	—	—	—	—	1	2
		F	1	—	—	—	—	—	—	—	—	—	—	—	1	
87-B.	Laryngitis ...	M	—	—	—	—	—	—	—	—	—	1	1	—	2	2
		F	—	—	—	—	—	—	—	—	—	—	—	—	0	
89. & 90 (A.B.) Bronchitis—																
A.	Bronchiectasis, Bronchial catarrh, etc. ...	M	—	—	—	—	—	—	—	—	1	—	—	—	1	1
		F	—	—	—	—	—	—	—	—	—	—	—	—	0	
	B. Other Bronchitis ...	M	21	51	51	6	—	—	2	2	8	1	14	—	156	310
		F	17	51	63	8	—	—	—	1	1	—	13	—	154	
91.	Broncho-pneumonia ...	M	16	57	78	27	5	9	11	56	49	17	15	3	343	537
		F	15	55	76	19	6	6	4	3	2	4	3	1	194	
92. (A.B.) Pneumonia, lobar and undefined—																
A.	Lobar pneumonia ...	M	1	14	23	11	10	2	21	97	81	37	24	2	323	418
		F	—	14	24	8	5	2	4	12	10	6	10	—	95	
B.	Pneumonia (type not stated) ...	M	1	20	74	20	13	8	21	67	69	43	32	—	368	528
		F	3	22	43	26	5	6	10	14	14	5	12	—	160	
93. (A.B.) Pleurisy—																
A.	Empyema ...	M	—	1	—	—	—	—	—	7	3	4	2	—	17	17
		F	—	—	—	—	—	—	—	—	—	—	—	—	0	
B.	Other pleurisy ...	M	—	—	—	—	—	—	—	3	—	2	—	—	5	5
		F	—	—	—	—	—	—	—	—	—	—	—	—	0	
94-B.	Pulmonary Oedema and Congestion ...	M	—	—	—	—	—	—	—	—	—	—	—	—	0	1
		F	—	—	—	—	—	—	—	—	1	—	—	—	1	
94-C.	Hypostatic pneumonia ...	M	—	—	—	—	—	—	—	1	1	—	—	—	2	2
		F	—	—	—	—	—	—	—	—	—	—	—	—	0	
95.	Gangrene of lung ...	M	—	—	—	—	—	—	—	6	2	3	1	—	12	12
		F	—	—	—	—	—	—	—	—	—	—	—	—	0	
96.	Asthma ...	M	—	—	—	—	—	—	—	—	1	—	2	—	3	7
		F	—	—	—	—	—	—	—	—	2	—	2	—	4	
98-B.	Other disease of the respiratory system ...	M	—	—	—	—	—	—	1	2	—	—	2	—	5	6
		F	—	—	1	—	—	—	—	—	—	—	—	—	1	
															1848	
V. Diseases of the Digestive System :—																
99-A.	Diseases of the teeth and gums ...	M	—	—	—	—	—	—	1	—	1	—	—	—	2	2
		F	—	—	—	—	—	—	—	—	—	—	—	—	0	
99-C.	Parotitis ...	M	—	—	1	—	—	—	—	—	—	—	—	—	1	1
		F	—	—	—	—	—	—	—	—	—	—	—	—	0	
99-D.	Other diseases of mouth and annexa ...	M	—	—	—	—	—	—	—	—	1	—	—	—	1	1
		F	—	—	—	—	—	—	—	—	—	—	—	—	0	
100-A.	Tonsillitis ...	M	—	—	—	1	—	—	—	1	1	—	—	—	3	3
		F	—	—	—	—	—	—	—	—	—	—	—	—	0	
100-B.	Ludwig's Angina ...	M	—	—	—	—	—	—	—	1	—	—	—	—	1	1
		F	—	—	—	—	—	—	—	—	—	—	—	—	0	
101.	Diseases of the oesophagus	M	—	—	—	—	—	—	—	—	1	—	—	—	1	2
		F	—	—	—	—	—	—	—	—	—	1	—	—	1	
102.	Perforating ulcer of stomach	M	—	—	—	—	—	—	—	6	8	3	2	—	19	23
		F	—	—	—	—	—	—	2	—	2	—	—	—	4	

DISEASES	Sex	Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years	Unknown	TOTAL	
103-A. Inflammation of stomach	M	21	8	7	—	—	—	—	—	3	3	3	—	45	71
	F	7	7	7	—	—	—	—	1	—	2	2	—	26	
103-B. Other diseases of the stomach ...	M	—	—	—	—	—	—	—	—	2	—	2	—	4	6
	F	—	—	—	—	—	—	—	1	—	1	—	—	2	
104-B. & 105-B. Diarrhoea ...	M	41	47	22	—	—	—	1	—	—	—	1	—	112	179
	F	24	24	12	—	—	—	—	2	1	—	4	—	67	
104-C. & 105-C. Enteritis (not returned as infective) ...	M	1	2	—	—	—	—	—	—	—	1	—	—	4	9
	F	1	4	—	—	—	—	—	—	—	—	—	—	5	
104-D. & 105-D. Gastro-enteritis...	M	48	100	36	3	2	—	2	3	4	2	5	1	206	382
	F	37	97	33	2	—	1	2	1	—	1	2	—	176	
106. Ankylostomiasis ...	M	—	—	—	—	1	1	6	15	17	10	3	—	53	56
	F	—	—	—	—	—	—	1	1	—	1	—	—	3	
107. Other intestinal parasites...	M	—	—	—	—	—	—	—	—	—	—	—	—	0	2
	F	—	—	2	—	—	—	—	—	—	—	—	—	2	
108. Appendicitis ...	M	—	—	—	—	1	1	3	10	5	—	—	—	20	29
	F	—	—	—	1	—	2	2	1	1	2	—	—	9	
109. (A.B.) Hernia, intestinal obstruction—															
A. Hernia ...	M	—	—	—	—	—	—	—	1	3	2	—	—	6	7
	F	—	—	—	—	—	—	—	—	—	—	1	—	1	
B. Intestinal obstruction ...	M	—	1	—	—	—	—	—	3	2	3	1	—	10	13
	F	—	1	—	—	—	—	—	—	1	—	1	—	3	
110. Other diseases of the intestines ...	M	—	—	—	—	—	—	—	—	2	2	1	—	5	10
	F	—	—	—	—	—	—	—	3	2	—	—	—	5	
113-A. Cirrhosis of liver ...	M	—	—	—	—	—	—	2	10	23	15	8	—	58	65
	F	—	—	—	—	—	—	—	1	2	3	1	—	7	
114. Biliary calculi ...	M	—	—	—	—	—	—	—	—	1	1	—	—	2	2
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	
115. Other diseases of liver ...	M	—	—	—	—	—	—	1	4	6	6	2	—	19	20
	F	—	—	—	—	—	—	—	1	—	—	—	—	1	
116-B. Other diseases of the spleen ...	M	—	—	—	—	—	—	1	6	5	—	—	1	13	15
	F	—	—	—	1	1	—	—	—	—	—	—	—	2	
117. Peritonitis (cause unstated)	M	—	—	1	1	—	2	3	9	4	1	1	—	22	25
	F	—	—	—	—	—	—	1	—	1	—	1	—	3	
118-A. Abdominal abscess, sub-phrenic abscess ...	M	—	—	—	—	—	—	—	—	—	—	—	—	0	1
	F	—	1	—	—	—	—	—	—	—	—	—	—	1	
118-B. Other diseases included under 118 ...	M	—	—	—	—	—	—	—	1	—	1	—	—	2	3
	F	—	—	—	—	—	—	—	—	—	—	—	1	1	
928															
VI. Non-Venereal Diseases of the Genito-Urinary System and Annexa:—															
119. Acute Nephritis ...	M	—	—	4	—	1	1	2	5	8	7	2	—	30	39
	F	—	1	3	1	—	2	—	2	—	—	—	—	9	
120-A. Bright's disease ...	M	—	2	4	—	1	—	3	10	34	45	51	—	150	214
	F	—	—	1	2	1	1	7	11	11	17	13	—	64	
120-B. Nephritis and Uraemia ...	M	—	—	—	—	1	—	—	—	1	1	1	—	4	8
	F	—	—	—	—	—	—	1	—	2	—	1	—	4	
122-C. Suppression of Urine ...	M	—	—	—	—	—	—	—	—	—	—	—	—	0	1
	F	—	—	—	—	—	—	—	1	—	—	—	—	1	
122-D. Other diseases of kidney and annexa ...	M	—	—	—	—	—	—	1	1	1	5	—	1	9	10
	F	—	—	—	—	—	—	—	1	—	—	—	—	1	

DISEASES	Sex	Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years	Unknown	TOTAL	
123. Calculi of the urinary passages ...	M F	— —	— —	— —	— —	— —	— —	— —	— —	1 —	— —	— —	— —	1 0	1
124. Diseases of the bladder ...	M F	— —	— —	— —	— —	— —	— —	— —	3 —	1 —	5 —	3 —	— —	12 0	12
125-B. Other diseases of urethra, etc. ...	M F	— —	— —	— —	— —	— —	— —	— —	1 —	2 —	4 —	— —	— —	7 0	7
127. Non-venereal diseases of male genital organs ...	M	—	—	—	—	—	—	—	2	—	1	—	—	3	3
129. Uterine tumour (non cancerous) ...	F	—	—	—	—	—	—	—	—	—	1	1	—	2	2
130-B. Other diseases of the uterus ...	F	—	—	—	—	—	—	—	1	—	—	—	—	1	1
131. Ovarian cyst, tumour (non cancerous) ...	F	—	—	—	—	—	—	—	—	—	1	—	—	1	1
132-B. Other diseases of the female genital organs...	F	—	—	—	—	—	—	—	—	—	1	—	—	1	1
															300
VII. The Puerperal State:—															
134-A. Abortion ...	F	—	—	—	—	—	—	—	2	—	—	—	—	2	2
134-B. Haemorrhage of pregnancy ...	F	—	—	—	—	—	—	1	1	2	—	—	—	4	4
134-C. Uncontrollable vomiting ...	F	—	—	—	—	—	—	—	1	—	—	—	—	1	1
135. Puerperal haemorrhage ...	F	—	—	—	—	—	1	2	5	3	—	—	—	11	11
136. Other accidents of childbirth ...	F	—	—	—	—	—	—	1	6	5	—	—	—	12	12
137. Puerperal fever ...	F	—	—	—	—	—	1	1	5	3	—	—	—	10	10
138-A. Puerperal nephritis and Uraemia ...	F	—	—	—	—	—	—	1	—	—	—	—	—	1	1
138-C. Puerperal convulsions ...	F	—	—	—	—	—	1	1	6	2	—	—	—	10	10
															51
VIII. Diseases of the Skin and of the Cellular Tissue:—															
142-A. Senile gangrene ...	M F	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	1 —	— —	1 0	1
142-B. Noma, gangrene of mouth ...	M F	— —	— —	— 1	— —	— —	— —	— —	2 —	— —	1 —	— 1	— —	3 2	5
142-C. Noma, pudendi ...	M F	— —	— —	— —	— —	— —	— —	— —	— —	1 —	1 —	— —	— —	2 0	2
142-D. Other gangrene ...	M F	— —	1 —	— 1	— —	— —	— —	2 —	6 —	6 2	6 1	4 —	— —	25 4	29
143. Carbuncle, Boil ...	M F	— —	1 —	— —	— —	— —	— —	— —	— —	— —	2 —	1 1	1 —	5 1	6
144-A. Phlegmon ...	M F	— —	— —	— 1	— —	— —	— —	1 —	6 —	8 —	8 —	4 —	— —	27 1	28
144-B. Acute abscess ...	M F	2 2	1 7	— 2	— —	— —	— —	— —	— —	1 —	1 —	1 —	— —	6 11	17

DISEASES			Sex	Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years	Unknown	TOTAL		
145-A.	Ulcer, Bedsore	...	M	—	—	—	—	1	1	1	3	5	3	5	—	19	}	21
			F	—	—	—	—	—	—	—	1	—	1	—	—	2		
145-C.	Pemphigus	...	M	1	—	—	—	—	—	—	—	—	—	—	—	1	}	1
			F	—	—	—	—	—	—	—	—	—	—	—	—	0		
145-D.	Other diseases of the integumentary system	...	M	—	—	—	—	—	—	—	1	1	—	—	—	2	}	3
			F	—	—	—	—	1	—	—	—	—	—	—	—	1		
																	113.	
IX. Diseases of the Bones and of the Organs of Locomotion:—																		
146.	Diseases of the bones	...	M	—	—	—	—	—	1	—	4	—	1	—	—	6	}	10
			F	1	1	1	—	—	—	1	—	—	—	—	—	4		
147.	Diseases of the joints	...	M	—	—	—	—	—	—	1	—	6	1	1	—	9	}	9
			F	—	—	—	—	—	—	—	—	—	—	—	—	0		
																	19	
X. Malformations:—																		
150-A.	Congenital hydrocephalus	...	M	—	—	1	—	—	—	—	—	—	—	—	—	1	}	1
			F	—	—	—	—	—	—	—	—	—	—	—	—	0		
150-C.	Congenital malformation of heart	...	M	1	—	—	—	—	—	—	—	—	—	—	—	1	}	1
			F	—	—	—	—	—	—	—	—	—	—	—	—	0		
																	2	
XI. Diseases of Early Infancy:—																		
151-A.	Premature birth	...	M	72	—	—	—	—	—	—	—	—	—	—	—	72	}	133
			F	60	1	—	—	—	—	—	—	—	—	—	—	61		
151-B.	Infantile atrophy, debility and marasmus	...	M	55	1	—	—	—	—	—	—	—	—	—	—	56	}	108
			F	52	—	—	—	—	—	—	—	—	—	—	—	52		
151-C.	Icterus Neonatorum	...	M	1	—	—	—	—	—	—	—	—	—	—	—	1	}	1
			F	—	—	—	—	—	—	—	—	—	—	—	—	0		
152-B.	Atelectasis	...	M	12	—	—	—	—	—	—	—	—	—	—	3	15	}	24
			F	9	—	—	—	—	—	—	—	—	—	—	—	9		
152-C.	Injuries at birth	...	M	1	—	—	—	—	—	—	—	—	—	—	—	1	}	1
			F	—	—	—	—	—	—	—	—	—	—	—	—	0		
																	267	
XII. Old Age:—																		
154-B.	Senile Decay	...	M	—	—	—	—	—	—	—	—	—	—	153	1	154	}	271
			F	—	—	—	—	—	—	—	—	—	—	117	—	117		
																	271	
XIII. Affections Produced by External Causes:—																		
155.	Suicide by poison	...	M	—	—	—	—	—	—	—	—	1	—	—	—	1	}	1
			F	—	—	—	—	—	—	—	—	—	—	—	—	0		
157.	Suicide by hanging or strangulation	...	M	—	—	—	—	1	—	1	9	10	7	2	1	31	}	36
			F	—	—	—	—	—	1	1	2	1	—	1	—	5		
159.	Suicide by firearms	...	M	—	—	—	—	—	—	1	—	—	—	—	—	1	}	1
			F	—	—	—	—	—	—	—	—	—	—	—	—	0		
160.	Suicide by cutting or piercing instruments	...	M	—	—	—	—	—	—	—	1	1	—	—	—	2	}	3
			F	—	—	—	—	—	—	—	1	—	—	—	—	1		
164.	Poisoning by food	...	M	—	—	—	—	—	—	—	1	—	—	—	—	1	}	1
			F	—	—	—	—	—	—	—	—	—	—	—	—	0		
165.	Other acute poisonings	...	M	—	—	—	—	—	—	1	—	—	—	—	—	1	}	1
			F	—	—	—	—	—	—	—	—	—	—	—	—	0		
167.	Burns	...	M	—	—	1	—	1	—	1	3	1	—	—	1	8	}	14
			F	—	—	1	1	1	—	1	—	2	—	—	—	6		
168.	Absorption of deleterious gases	...	M	1	—	—	—	—	—	—	—	—	—	—	—	1	}	2
			F	1	—	—	—	—	—	—	—	—	—	—	—	1		
169.	Accidental drowning	...	M	—	—	1	1	2	4	3	11	6	2	2	1	33	}	35
			F	—	—	—	—	—	—	—	2	—	—	—	—	2		

DISEASES		Sex	Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years	Unknown	TOTAL
170. Injury by firearms	...	M	—	—	—	—	—	—	—	1	1	—	—	—	2
		F	—	—	—	—	—	—	—	—	—	—	—	—	0
171. Injury by cutting or piercing instruments	...	M	—	—	—	—	—	—	—	—	1	—	—	—	1
		F	—	—	—	—	—	—	—	—	—	—	—	—	0
182. Homicide by firearms	...	M	—	—	—	—	—	—	—	—	—	1	—	—	1
		F	—	—	—	—	—	—	—	—	—	—	—	—	0
183. Homicide by cutting or piercing instruments	...	M	—	—	—	—	—	1	1	8	4	2	—	1	17
		F	—	—	—	—	—	—	—	1	1	2	—	—	4
185. Fractures	...	M	—	—	—	1	—	3	5	21	13	5	5	4	57
		F	—	—	—	1	—	1	1	2	—	—	1	1	7
186. Other violence	...	M	—	—	1	—	1	—	3	12	7	2	3	4	33
		F	—	—	1	—	—	—	—	—	—	—	2	—	3
XIV. Ill-Defined Causes :—															219
187. Dropsy	...	M	—	—	—	—	—	—	—	2	12	20	35	—	69
		F	—	—	—	—	—	—	—	2	4	4	22	—	32
189-A. Heart failure	...	M	—	—	—	—	—	—	1	1	—	—	—	—	2
		F	1	—	—	—	1	—	—	—	2	—	1	—	5
189-B. Atrophy, debility, marasmus	...	M	32	8	9	4	—	—	—	2	1	2	4	—	62
		F	23	16	11	5	—	—	1	—	—	2	6	—	64
189-D. Pyrexia	...	M	30	90	92	3	1	—	—	—	1	—	1	—	218
		F	27	76	74	2	1	—	1	—	1	—	2	—	184
189-E. Other ill-defined deaths	...	M	8	1	—	—	—	—	—	2	22	21	4	—	58
		F	3	—	1	—	—	—	—	—	—	—	—	—	4
189-F. Cause not specified	...	M	2	1	2	2	—	—	—	17	7	1	1	10	43
		F	3	2	1	—	—	—	—	—	—	—	1	—	7
															748
Total males	...	—	597	608	570	158	102	164	453	1667	1743	1318	902	43	8,325
Total females	...	—	524	504	508	171	90	72	156	397	319	264	398	3	3,406
Grand Total	...	—	1121	1112	1078	329	192	236	609	2064	2062	1582	1300	46	11,731

The following are the death rates per 1,000 for males and females under 15 and over 15 years of age excluding infantile deaths :—

		1920			1919		
		Male	Female	Total	Male	Female	Total
1 to 15 years of age	...	27.5	22.5	24.8	21.9	18.7	20.2
Over 15 „ „	...	33.0	20.8	29.5	31.4	18.7	27.8

As compared with 1919 these rates show an increase in “under 15” of 4.6 and in “over 15” of 1.7 per 1,000.

Infantile Death Rate

The infantile death rate was 248.9 per 1,000 births compared with 261.7 in 1919 and 264.2 in 1918. The rate for each nationality and sex was as follows :—

			Males	Females	Total
Europeans	...	...	74.0	43.4	60.0
Eurasians	...	...	155.5	144.7	150.6
Chinese	...	...	266.9	262.3	264.8
Malays	...	...	232.4	231.3	231.8
Indians	...	...	266.6	139.5	200.8
Others	...	...	113.9	144.5	129.6
Total	...	...	254.4	242.7	248.9

As compared with the previous year these rates show increases for Europeans and decreases for Eurasians, Chinese, Malays, Indians and other nationalities.

The infantile death rate is the lowest yet recorded.

Mortality according to nationalities and ages.

The following return shows the number of deaths at different age periods in the different nationalities :—

Nationalities	Sex	Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55	Unknown	Total	
Europeans	M	4	2	1	...	3	7	13	11	10	5	3	59	} 77
	F	2	1	...	...	...	3	6	2	2	2	..	18	
Eurasians	M	7	7	4	2	...	4	9	6	9	7	...	55	} 103
	F	4	7	8	...	3	2	7	7	2	8	...	48	
Chinese	M	492	478	484	115	199	320	1288	1454	1120	692	29	6671	} 9241
	F	440	396	408	127	120	118	281	230	195	253	2	2570	
Malays	M	59	83	52	28	24	26	138	121	82	148	1	762	} 1284
	F	59	71	64	30	25	19	65	56	35	97	1	522	
Indians	M	31	33	26	10	38	90	196	140	84	41	8	697	} 880
	F	16	20	21	10	8	12	28	15	22	31	...	183	
Others	M	4	5	3	3	2	6	23	11	13	9	2	81	} 146
	F	3	9	7	4	6	2	10	9	8	7	...	65	
Total Males	M	597	608	570	158	266	453	1667	1743	1318	902	43	8325	} 11,731
Total Females	F	524	504	508	171	162	156	397	319	264	398	3	3406	
Grand Total		1121	1112	1078	329	428	609	2064	2062	1582	1300	46	11731	

Localities and Mortality

The following return gives the number of deaths in the different Sanitary Districts exclusive of deaths in Hospital.

(1) From all causes.

District No. I	...	317	District No. X	...	184
Do. II	...	164	Do. XI	...	200
Do. III	...	118	Do. XII	...	695
Do. IV	...	351	Do. XIII	...	727
Do. V	...	1,344	Do. XIV	...	555
Do. VI	...	515	Do. XV	...	638
Do. VII	...	364	Do. XVI	...	166
Do. VIII	...	384	Do. XVII	...	214
Do. IX	...	308	Do. XVIII	...	639

(2) From the diseases causing most deaths.

As the population of each district cannot be estimated the death rates cannot be given.

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII
Malarial fever	47	23	15	57	157	75	62	66	42	37	31	124	138	92	106	31	23	97
Pneumonia	43	15	17	45	150	62	51	51	56	27	24	105	101	67	67	21	20	62
Beri beri	20	11	5	24	69	25	19	21	18	17	19	35	30	21	37	10	10	40
Phthisis	56	38	18	70	169	82	73	57	55	25	27	106	101	95	114	29	53	93
Enteric fever	2	1	...	2	2	...	...	...	2	...	...	...	...	1	1	...	1	...
Diarrhoea	5	2	3	4	72	3	2	5	2	2	...	8	10	6	7	2	...	7
Dysentery	15	8	8	18	78	29	13	13	13	11	12	44	36	14	23	6	7	23
Cholera	1	...	...	...	...	...	...	1	3	...	4	...	2	1	...	...	...	...
Diphtheria	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Rheumatism	1	...	2	4	1	3	5	2	5	...	2	1	5	8	4	4	3	15

Reliability of Deaths Returns

The following return shows the percentage of deaths the causes of which were certified by Medicalmen, the Coroner and the Inspecting Registrars respectively.

		Europeans	Eurasians	Chinese	Malays	Indians	Others	Total
Registrars	...	1	10	3346	688	254	19	4318
Medicalmen	...	72	92	5368	576	587	125	6820
Coroner	...	4	1	527	20	39	2	593
Total	...	77	103	9,241	1,284	880	146	11,731

This gives a percentage of 36.8 certified by the Registrars, as against 39.9 last year, 58.1 certified by medicalmen, as against 55.2 last year and 5.0 certified by the Coroner as against 4.8 last year.

The percentages for the last 10 years have been as follows :—

		1911	1912	1913	1914	1915	1916	1917	1918	1919	1920
Registrars	...	53.8	51.9	51.0	46.6	48.9	48.6	45.3	38.8	39.9	36.8
Medicalmen	...	41.2	43.3	45.3	48.9	47.3	46.2	49.4	55.8	55.2	58.1
Coroner	...	4.9	4.6	3.6	4.3	3.2	5.0	5.2	5.3	4.8	5.0

The percentage of deaths certified by registered medical men and the Coroner show increases of 2.9 and .2 respectively while deaths certified by the Inspecting Registrars show a corresponding decrease. How far the Registrars returns are reliable may be seen in the following table where the number of deaths certified by the Registrars to be due to certain common diseases is compared with the number of deaths from the same causes in Tan Tock Seng Hospital.

		TAN TOCK SENG HOSPITAL		INSPECTING REGISTRARS	
		Number of deaths certified at T.T.S.	Percentage	Number of deaths certified by Registrars	Percentage
Total Deaths	...	1,306	—	4,318	—
Tuberculosis	...	277	21.2	840	19.4
Malaria	...	182	14	803	18.5
Dysentery	...	188	14	179	4
Beri-beri	...	14	1	306	7

In both cases these four diseases account for roughly 50% of all the deaths. The returns correspond, too, fairly closely in regard to Tuberculosis. As regards Dysentery and Beri-beri the Registrars returns are in my opinion quite unreliable. Applying the Tan Tock Seng percentage to the Registrars figures we would have 627 deaths from Dysentery instead of 179, which is much more likely to be the true state of affairs. Again with Beri-beri the fall in the incidence of this disease during 1920 has been noted all over the peninsula and has been specially commented on by the Government Pathologist in his analysis of the figure for Tan Tock Seng (See pamphlet by Dr. A. J. McClosky recently published).

There is no reason to suppose that the factor producing this fall was not operating all over Singapore as well as in the case of hospital patients. In other words the figures for Beri-beri are likely to be greatly exaggerated.

It will be evident from the above that correct deductions as to the causes of death cannot be drawn from the Registrars' figures and while this is so we must always be working more or less in the dark in any efforts directed at the reduction of the death rate. The Registrars certainly are a help in "Spotting" infectious disease but I think a real attempt should be made to have post mortems done on many of the bodies at present seen and certified by these officers. A fairly large number of the cases in question are young adults who should normally have a long expectations of life. It is natural to suppose they are succumbing to some acute affection—probably intestinal in nature. Many young children, too, die and the cause of death assigned is in many cases only a symptom, such as Convulsions, which tells us nothing. Whatever the cause of death I think the essential thing is that we should know what it is and towards that end I would suggest that an effort be made to have post-mortem done in say 20% of cases. Having due regard to religious observances I do not think there should be any insuperable difficulties in the way of obtaining that number.

V. Registration of Births and Deaths

The numbers registered at the different offices were as follows :—

	Births	Deaths
Central Office	1,353	2,482
Prinsep St. Office...	4,385	4,997
Kreta Ayer Office...	3,231	4,252
	<u>8,969</u>	<u>11,731</u>

9 Births and 1 death were registered in the Post Registration Books and the sum of \$195 was received in late fees.

19 queries were sent to medical men for further information where the cause of death had been indefinitely stated.

VI. Anti Mosquito Work

3 gangs of 15 men were continuously employed throughout the year in maintenance work in the anti malarial areas—in clearing drains and cutting brush, while oiling was done periodically in Kampong Bahru, Jalan Besar, Owen Road, Geylang Road, Tanjong Katong, Bukit Timah Road, and Cuppage Road areas. The quantity of oil used was 1,797 gallons.

A report on purely anti malarial works will be found in the Bacteriologist's report.

VII. Municipal Analyst

Water.—6,029 samples from various points in the Municipal Supply were examined. No signs of harmful contamination were found in any. 28 samples of well-water were examined and all but 2 condemned.

Milk.—807 samples were examined of which 148 or 18.3% were adulterated. The average adulterations for added water was 13.1%.

Sewage.—900 samples from the Municipal installation were examined and found satisfactory. It is gratifying to note that Mr. Harrington records that the effluent from the sewage works consistently satisfies the standards laid down by the Royal Commission on Sewage Disposal.

48 examinations were made of effluents from private installations and in every case were found to be bad. Mr. Harrington is of opinion that these bad results are “in the main due to faulty construction and lack of necessary supervision after the system has been installed” With this opinion I am in entire agreement. Hitherto the Health Officer has not been consulted and private installations have been put down haphazard without regard to facilities for carrying away the effluent and thoroughly diluting it. And though Coral has been proved to be far and away the best filtering medium for the contact beds it was the exception to find it used in these private installations. I am glad to say, however, that in future the question of the installation of a private Septic Tank will be left to the discretion of the Health Officer.

Standard designs have been prepared and any new installation allowed will have to conform to these.

The question of the Supervision of these small installations is an important one and one I think that should not be left to the householder. It should be taken over by the Sewage Department—a monthly charge or even a sewer rate might be levied.

The Analyst's report is appended.

VIII. Municipal Bacteriologist

Public Health Examinations.—4,344 specimens were examined. They included specimens from cases of Malaria, Tuberculosis, Typhoid and Paratyphoid Fevers, Dysenteries, Cholera, Plague, Cerebro-Spinal Fever, Diphtheria, Leprosy and 854 miscellaneous.

These figures show a big increase on those of last year so that it would appear that the practitioners are beginning to make a fuller use of the facilities of the laboratory.

Municipal Water.—581 samples from various points in the supply were examined. No sign of dangerous contamination was found in any of them.

Mortuary.—There were 79 autopsies made in cases of suspected or known cases of infectious disease.

Rats.—The bodies of 102 rats were examined and 3 were found to be Plague infected.

The Bacteriologist's report is appended.

IX. Municipal Nurses

Throughout the year there were four nurses but actually only three were continuously on duty as one was called on to act as matron at the Middleton Hospital when Mrs. Toft went on long leave.

The total visits numbered 10,546 including 5,398 first visits, 4,577 revisits and 571 wrong addresses.

Infants not seen numbered 309 of whom 171 had been given out to nurse, 62 were still-born and 76 had died.

Infants seen numbered 5,268—an increase of 1,274 as compared with 1919 and equal to 58% of the total births registered.

The nationalities were as follows :—

Europeans	...	2	(1.3 per cent. of European births)
Eurasians	...	95	(57.2 „ „ „ Eurasian „)
Chinese	...	4,233	(62. „ „ „ Chinese „)
Malays	...	730	(62.2 „ „ „ Malay „)
Indians	...	168	(33.7 „ „ „ Indian „)
Others	...	40	(24.6 „ „ „ Other „)

There were 41 cases of twin births. Of the 5,268 infants seen 4,948 or 93.9% were healthy while 312 were ailing.

The cord was found healthy in 5,041 or 95.6 per cent.

As regards feeding 73.3 per cent. of the infants were being breast fed, 1.9 per cent. partly breast and partly bottle-fed, 23.8 per cent. bottle-fed on tinned milk and the remaining 1 per cent. on various foods.

Of the 1,314 bottles in use 836 were of a suitable pattern and 478 unsuitable. 1,268 were clean and 46 dirty.

Attendance at Confinement.—Out of 5,431 mothers 20 were attended by medicalmen, 4,354 by midwives, 219 by “friends” and 838 were unattended. 53.4 per cent. of the cases were attended by C. Class midwives and 27.8 by D. Class.

Condition of mothers.—On first visit 4,988 were found to be progressing satisfactorily, 418 less so, 6 had removed and 19 had died.

Housing.—Of the 5,431 mothers 4,899 were living in cubicles or single rooms and 532 in houses of more than one room.

Revisits.—3,176 mothers and 4,470 infants were seen at revisits. Of the former 3,090 remained in a satisfactory condition 61 less so, 20 had removed and 5 had died. Of the infants 3,934 were satisfactory 387 were ailing, 69 had been removed and 80 had died.

Infant ailments.—267 infants were found ailing chiefly from Thrush, Conjunctivitis, Marasmus and Jaundice.

X. Midwives

At the end of the year there were 154 midwives on the Register and during the year they attended 5,926 cases.

The following return shows the number and nationality of cases attended by registered C and D class midwives in the last 7 years:—

	1914	1915	1916	1917	1918	1919	1920
Europeans ...	1	...	3	11	9	6	2
Eurasians ...	16	21	27	66	144	151	159
Chinese ...	411	614	1,140	1,988	3,762	4,017	4,264
Malays ...	5	15	33	140	916	1336	1281
Indians ...	46	33	55	67	142	146	143
Others ...	1	6	9	13	59	70	27
	480	689	1,267	2,285	5,032	5,726	5,876

The 5,926 cases attended by midwives represent 66% of the total births registered as compared with 68.1% in 1919. Of the remaining 3,043 not attended by midwives, 919 occurred in the Maternity and K.W.S. hospitals so that at least 76% of the total mothers received skilled treatment of some kind during confinement. In 388 cases the whole of the midwife's fee and

in 701 part of it was paid by the Commissioners. The total sum paid by them was \$3,506 and was distributed amongst the different nationalities as follows:—

		1916	1917	1918	1919	1920
Eurasians	...	9.00	20.00	34.00	46.00	27.00
Chinese	...	1438.00	2567.40	2593.90	2922.00	2500.00
Malays	...	86.00	217.00	516.10	805.00	852.00
Indians	...	147.00	100.00	71.10	67.00	122.00
Others	...	10.00	...	7.00	16.00	5.00
		1690.00	2904.40	3222.00	3856.00	3506.00

For the 4,787 remaining cases the midwives received fees amounting to \$52,261.50. The average fee in paying cases in the different nationalities for the last 5 years has been

		1916	1917	1918	1919	1920
Europeans	...	\$37.66	\$20.00	\$45.00	\$54.16	\$87.30
Eurasians	...	15.72	14.65	18.91	16.86	18.70
Chinese	...	8.56	8.30	9.29	9.62	10.87
Malays	...	12.18	8.40	7.25	7.66	8.56
Indians	...	10.04	9.86	10.65	10.63	13.70
Others	...	13.28	16.15	11.94	12.80	39.65

The A. Class midwives attended 7 and the B. Class 43 cases. No return of fees was sent in.

XI. Back Lanes

See Engineer's Report.

XII. Food and Markets

With the exception of Rochore Market which is an unsuitable building the Markets have been kept in a satisfactory condition. Certain repairs detailed in the Market Inspector's report were carried out. The usual annual cleansing took place at Chinese New Year—when 1,012 rats were caught and killed.

The quantity and quality of the foodstuffs passing through the markets remained up to the average.

Prices according to the Market Inspector were approximately 70% higher than those of last year. In his report he gives an interesting table showing maximum and minimum prices during the year for various articles.

Unsound Foodstuffs. In all 18,339 catties of unsound beef, mutton, pork and fish, 58,454 catties of fruit and vegetable, 608 eggs, 526 cases and 4,309 tins of unsound foodstuffs were destroyed. In addition 11,647 lbs. of unsound ham were destroyed. Of this, one consignment exposed for sale in a public auction room weighed over 8,000 lbs.

105 persons were prosecuted for exposing unsound food for sale and there were 111 prosecutions for breaches of the Market Bye-laws.

Revenue from the markets amounted to \$379,365.98.

Milk sellers. 276 were licensed.

The report of the Market Inspector is appended.

XIII. Eating Shops, Coffee Shops and Lodging Houses

Licenses were issued for 300 Eating shops, 644 Coffee shops and 27 Lodging and Boarding Houses for which fees amounting to \$971 were received.

XIV. Places of Public Resort

Theatres, Hotels, Public Houses, Opium Shops, Cinematograph Halls, and Liquor Shops were periodically inspected and were found as a rule in satisfactory condition.

XV. Slaughter Houses

162,740 animals were received compared with 156,964 in 1919. 90 animals were rejected as being in bad condition. The carcasses of 642 dead or diseased animals were destroyed and 1,665 portions, injured or diseased, removed and destroyed.

There were 12,077 Australian sheep slaughtered.

XVI. Offensive Trades

3,824 licenses for offensive trades were issued, the fees amounting to \$10,429.

There were 102 prosecutions for carrying on Offensive Trades without a licence, 86 convictions were obtained with fines amounting \$561.

XVII. Obstructions

There were 437 prosecutions for obstruction with 396 convictions with fines amounting to \$1,777.

The following permits were issued for temporary storage of goods on quays:—

Boat Quay	168	...	...	\$3,859.20
North Boat Quay	12	...	...	360.00
Kim Seng Road	12	...	...	240.00
	192			\$4,459.20

XVIII. Hawkers

Hawkers were licensed and fees drawn as follows:—

	<u>Number</u>	<u>Fees</u>
Day Hawkers	3,582	\$ 7,669.90
Night Hawkers	5,146	26,079.70
Itinerant Hawkers	6,578	6,578.00
	<u>15,306</u>	<u>\$40,327.60</u>

XIX. Burial Grounds

The following return shows the return of Burials in each of the Municipal Burial Grounds during the year:—

Bidadari	<u>1920</u>	<u>Since opening</u>
Protestant	151	1,392
French Roman Catholic	208	1,526
Portuguese Roman Catholic	63	606
Pauper	483	4,821
Serangoon Road		
Mohammedan	169	1,669
Infectious Disease		
Serangoon Road	62	164
Yeo Chu Kang Road	53	444
	<u>1,189</u>	<u>10,622</u>

There were 5,173 inspections made during the year by the Burial Ground Inspector.

There were 15 exhumations and 62 Cremations.

The following return shows the number of Burial grounds in use Public and Private belonging to various nationalities within Municipal Limits.

	Public	Private	Total
Christian	2	—	2
Jewish	1	—	1
Parsee	1	—	1
Parsee Islam	1	—	1
Malay	5	5	10
Hokien	8	80	88
Teochew	2	9	11
Hindoo	1	—	1
Hindoo Convict	1	—	1
Kling Islam	1	2	3
Siamese	1	—	1
Prison and General Hospital	1	—	1
	<u>25</u>	<u>96</u>	<u>121</u>

The total number of burials inside municipal limits for the year was 7,014 made up as follows :—

Europeans	...	...	...	100
Eurasians	...	...	...	122
Chinese	...	...	...	4,829
Malays	...	...	...	1,440
Indians	...	...	...	501
Others	...	...	...	22
				7,014

XX. Staff

Dr. Middleton who had originally intended to wait for Dr. Glennie to return from long leave, was finally compelled to resign on account of ill health and retired in the end of October. During the twenty seven years in which he acted as Municipal Health Officer he showed an unselfish devotion to duty—duty which was always exacting and often disheartening. He was invariably faithful to the best ideals of medicine and the results he accomplished during the time he held office will be a lasting testimonial to the efficiency to his work. His retiral was keenly regretted by every member of the Department.

Dr. Glennie who went on leave in July was appointed Health Officer while the writer was appointed Deputy and to act as Health Officer until Dr. Glennie's return.

Dr. Dawson arrived from England in May and assumed duty as Resident at Middleton Hospital and Tuberculosis Officer.

Dr. Gordon arrived in September and assumed duty as Assistant Health Officer.

Mr. Cuckney, Chief Sanitary Inspector returned from home leave in August. Mr. Wilson, Divisional Inspector and Mr. McMahon, Market Inspector, both newly appointed arrived from England in May.

Mrs. Toft, Matron, Middleton Hospital went on long leave in June.

Miss Dunbabin, Miss Haslett and Miss Holmes arrived from England in January and assumed duty as District Nurses.

Messrs. W. E. Jansen, S. V. Hogan, C. A. de Souza, G. F. Glass and G. Perry joined the Sanitary Inspectors' Staff while Messrs. S. Jansen, W. S. Fraser and G. Armstrong resigned.

Mr. Neil, Sanitary Inspector, was seconded in May as Acting Superintendent of Abattoirs. Other minor changes in the Subordinate Staff occurred.

Health of Municipal Staff. There were 3,267 cases of sickness treated. 233 persons were sent to hospital and 3,961 dressings were applied to 1,152 persons.

XXI. General

There were 7,545 notices served which with 3,431 brought over from 1919 made a total of 10,976. Of these 8,621 were limewash notices. Of the total 8,760 were complied with while 2,216 were carried over to 1921.

In addition to these notices 147 intimations were sent. In the latter part of the year the principle was adopted of sending intimations prior to the issue of a legal notice—the idea being the saving of time.

There is already every indication that the method will prove a success.

There were 940 convictions for non-compliance with notices and fines imposed amounting to \$1,582.

There were 37 arrest cases.

There were 108,644 inspections made, 6,814 prosecutions 5,932 convictions and fines imposed amounting to \$22,574.

The following reports and returns are appended :—

Report of Analyst.
Report of Bacteriologist.
Report of Resident Middleton Hospital.
Report of Market Inspector.
Return of Inspections, Prosecutions and Fines.
Return of Notices served.
Summary of Arrest Cases.
Return of Licenses for Offensive Trades.

I have the honour to be,
Sir,
Your obedient Servant.

P. S. HUNTER, M.A., M.B., Ch. B., D.P.H.
Ag. Municipal Health Officer.

ANNUAL REPORT

FOR

1920

OF THE

**MUNICIPAL BACTERIOLOGICAL
LABORATORY**

SINGAPORE

BY

P. S. HUNTER, M.A., M.B., D.P.H.

BACTERIOLOGICAL DEPARTMENT,

March, 1921.

To

THE MUNICIPAL HEALTH OFFICER.

SIR,

I have the honour to forward the report on the working of this department during the year 1920.

Public Health Examinations

During the year 4344 specimens were sent to the laboratory for examination. They were made up as follows:—

Malaria

1028 blood films were examined and in 204 or approximately 20 per cent. the malarial parasite was demonstrated. 85 were Benign Tertian 106 Subtertian, 10 Quartan, 2 mixed Benign and Subtertian and 7 mixed Subtertian and Quartan infections.

Tuberculosis

519 specimens in all were examined including 504 of Sputum, 9 of pork, 2 of Urine, 2 of pus, 1 of Bullock gland tissue and 1 of lung tissue. The tubercle bacillus was demonstrated in 136 specimens of Sputum. Specimens other than Sputum were examined by animal inoculations but all were found negative.

Typhoid and Paratyphoid Fevers

Of 257 sera tested against the B. Typhosus 49 gave a positive widal 19 specimens of fæces were examined but the B. Typhosus was not isolated from any.

250 sera were tested against both B. Paratyphosus B. and B. Paratyphosus A. Of these 14 gave a positive reaction with Para B and 7 with Para A.

Dysenteries

In this group 482 examinations were made.

Amoebic.—Of 451 specimens of fæces examined, 95 showed the presence of Entamoeba histolytica or its cystic form.

Bacillary.—31 specimens were examined and in 4 the Bacillus of Dysentery (Flexner) was isolated.

Cholera

47 specimens mostly from the wards and the P. M. room at Middleton Hospital were examined. The specific Vibrio was found in 15.

Plague

107 specimens were examined the B. Pestis being demonstrated in 62 of these. The bodies of 102 rats were examined and 3 found to be infected with Plague.

Diphtheria

337 specimens were examined and in 62 the specific bacillus was found. Both direct and cultural methods were employed.

Cerebro Spinal Fever

69 specimens of Cerebro Spinal Fluid were examined, the meningococcus being demonstrated in 38.

Leprosy

23 specimens were examined and 9 proved to be positive. In most cases the patient was brought to the laboratory for examination.

Miscellaneous

Under this heading 854 specimens were examined. These included:—

	Specimens
Urine for general examination	85
„ „ Gonococci	54 (13)
„ „ Causative organisms	4
„ „ Bilharzia	2 (1)
Faeces for ova of intestinal worms	415 (50)
„ „ Blood	1
„ (Horse) for ova	10 (10)
„ (Bullock) „ „	3 (2)
Sputum for Pneumococci	10 (4)
Cerebro-Spinal Fluid for Pneumococci	4 (3)
Pus for Gonococci	234 (121)
„ (Eye) „ „	1 (1)
Prostatic Fluid Gonococci... ..	3
Blood for Wassermann Reaction	13 (6)
„ (Dog) „ Piroplasma	1
Excedate for Spirochaeta pallida	10 (1)
Brain (Dog) for Negri Bodies	1
Liver (Dog) for Schistosoma ova	1 (1)
Pus for Kock-Weeks bacillus	1
Ear discharge for fungi	1

Figures in brackets represent positive findings.

Water Analysis

During the year 581 samples of water from various points in the Municipal Supply were examined. The usual routine examinations were carried out.

(a) Estimation of the total number of organisms growing on Agar in 48 hrs at 37° C.

(b) Estimation of the smallest quantity of the smallest in which Lactose fermenting organisms were present. When necessary the lactose fermenting organisms were worked out and identified.

The results were as in previous years uniformly good.

A special examination of the Salt Water Tank at Fort Canning was undertaken in September but the result obtained showed that the sewage contamination was not any higher than was naturally to be expected, considering the source of supply.

Middleton Hospital

The usual routine was carried out, all patients being examined on admission where necessary and the discharge of recovered cases being carefully controlled by repeated examinations.

Mortuary

79 autopsies were performed during the year. They were as follows:—

Plague Bubonic	...	...	...	23
„ Septicaemic	...	...	...	1
Cholera	...	...	...	14
Smallpox Haemorrhagic	...	...	...	1
Cerebro Spinal Fever	...	...	...	12
Diphtheria	...	...	...	1
Dysentery Amoebic	...	...	...	1
„ Bacillary	...	...	...	3
Enteric Fever	...	...	...	1
Malaria	...	...	...	2
Tuberculosis Pulmonary	...	...	...	3
„ Urinary	...	...	...	1
Pneumonia Lobar	...	...	...	1
Meningitis Pneumococcal	...	...	...	2
Influenza	...	...	...	2
Chronic Endocarditis	...	...	...	1
Osteo Myelitis	...	...	...	2
Pyaemia	...	...	...	1
Gastro Enteritis	...	...	...	1
Chronic Nephritis	...	...	...	2
Intestinal Obstruction	...	...	...	1
Acute Pancreatitis	...	...	...	1
Cirrhosis of Liver (Syphilis)	...	...	...	1
Schistosomiasis	...	...	...	1

79

Anti Malarial Work

All the areas were revisited several times during the year and were found to be generally satisfactory. The subsoil pipes over in the oldest areas continue to work well and only minor faults are found from time to time.

New Works

New works were completed at:—

Swamp between Nassim and Dalvy Roads, consisting of subsoil drainage with rabble sump.

Glencaird Area. Subsoil area in the lower part of the area. The main open ditch was replaced by a concrete channel with slab revetment and turfed sides. The lower part of this area has been greatly improved by these measures.

Tyersall Ravine to King's Road.—Subsoil drainage and sumps. Here also the main ditch was replaced by an open concrete channel. This was necessary as it takes the effluent from a small septic tank installation. Half the cost of this work will be paid by the Straits Trading Co. whose property has been greatly improved.

Tanglin Reserve Road Ravine.—Subsoil drainage with open concrete channel. This channel also takes the effluent from a septic tank.

Cluny Road Extension.—Subsoil drainage with open concrete channel. This work completes the Cluny area to its junction with the roadside drain.

Holland Park Area.—Subsoil drainage with open concrete channel and concrete sumps.

Cavenagh Road Filters.—Subsoil drainage with concrete sump N. Maculatus was breeding very freely in this area.

During the year my assistant Mr. Chin Fong has been of the greatest assistance to me especially in the latter half of the year when Dr. Glennie went on leave and later Dr. Middleton retired. He has been promoted to Grade I his promotion taking effect from January of this year.

I have the honour to be,

Sir

Your obedient servant,

P. S. HUNTER,

Municipal Bacteriologist.

SINGAPORE MUNICIPALITY

THIRTEENTH ANNUAL REPORT

OF THE

MUNICIPAL ANALYST

FOR THE YEAR

1920

BY

A. G. HARRINGTON, F.I.C., F.C.S.

MUNICIPAL LABORATORY,

SINGAPORE, 20th January, 1921.

TO

THE MUNICIPAL HEALTH OFFICER.

SIR,

I have the honour to submit herewith the Thirteenth Annual Report of the Municipal Laboratory.

During the year 1920, 8,057 samples have been submitted to me for analysis and the following table summarises the nature of these samples.

Well Waters	...	...	...	...	28
Municipal Waters	...	...	...	...	6029
Milks from Itinerant Vendors	...	...	...	...	807
Sewages and Effluents from Municipal Sewage Works	...	...	...	...	900
Sewages and Effluents from private installations	...	...	...	...	48
Air	...	...	...	...	97
Flour	...	...	...	...	6
Butter	...	...	...	...	12
Margarine	...	...	...	...	3
Quinine Sulphate	...	...	...	...	13
Tinned Milk	...	...	...	...	29
Whisky	...	...	...	...	8
Aerated Waters	...	...	...	...	21
Sugar	...	...	...	...	8
Beer	...	...	...	...	5
Tinned Goods	...	...	...	...	13
Samples from Engineer's Department	...	...	...	...	3
„ „ Gas Department	...	...	...	...	15
„ „ Electrical Department	...	...	...	...	2
„ „ Health Department	...	...	...	...	10

I. Well Waters

All the samples were taken from wells within Municipal limits and of twenty eight examined all except two were condemned as being unfit for use.

The two that were passed as yielding a pure water were taken from wells that were properly constructed. Water is usually properly filtered and rendered free from harmful organisms, which enters the well at a distance of from 6 to 12 ft. depending upon the porosity of the soil.

Water which enters at a less depth is liable, especially in rainy weather, to be imperfectly purified and dangerous to drink. It therefore follows that the top 6 to 12 ft. of a well should be impervious to water and that the upper portion of well should be raised and so finished that no surface water can gain access to it. Under these circumstances and provided that there are

no serious sources of contamination in the near vicinity and also that the ground is not fissured then the well will presumably always give good water. The two wells that were passed complied with these conditions.

In the cases of the other 26 that were condemned one or more of these conditions were always wanting. In many cases the wells were no more than mud holes in the ground. In other cases the wells had not been properly constructed originally, the walls consisting of bricks fixed by a very inferior cement. Others showed that they had originally been constructed properly but owing to subsidence of soil the walls were cracked. In most cases sources of contamination *e.g.* latrines, were situated far too close to the well. The quality of the water can practically always be prejudged by an examination of the well and its surroundings.

Several years ago, a systematic search of the more crowded parts of the town was made and every well found had a sample taken, which I analysed. In every case the result was the same, badly contaminated with unoxidised sewage. It is impossible for the water to be otherwise than badly contaminated as in these crowded areas the whole of the soil is soaked in sewage and even if the well were properly constructed, which was not the case in every instance, the water has no chance to become purified before reaching the well. Consequently a strict watch should be kept for any reopened wells. In my opinion there can be no real improvement in the health of a town that has a large number of polluted wells in use by its inhabitants even if, as one is generally informed, the water is only used for washing down the house.

In less crowded districts such as Tanglin no well should be allowed unless it is properly constructed and far removed from possible sources of contamination especially now that private sewage installations are becoming popular.

II. Waters from Municipal Supply

During the year samples have been analysed regularly from the various sources, viz. impounding reservoirs, filter beds, clear water tanks, service reservoirs and taps in various parts of the town. In all 6,029 samples were analysed.

Samples from impounding reservoirs also include samples from the various feeders into these reservoirs and as this may be considered the starting point of our water supply it is interesting to note the character of this water. It is an extremely pure supply and contains practically nothing in solution and only a little vegetable matter in suspension. At times when the beds of these streams are being cleaned out the amount of suspended matter naturally rises but taking it generally the water from these feeders is undoubtedly a better supply than that which is delivered from the impounding reservoir.

That the water in the reservoir is not as good as the feeder supply is to be expected though I would point out here that when I say "not as good" I do not mean that it has taken up organic impurities that will be harmful to health but only refer to vegetable impurities. That such impurities have increased is due to the fact that the bed of the reservoir contains much vegetable material which slowly becomes soluble or colloidal. That such action takes place is shown by the fact that during dry weather, when the level of the reservoir has fallen considerably, the water that is drawn off contains far more vegetable matter, than the water drawn off when the reservoir is full. There can be very little mixing of the top and lower strata of the water in the reservoir owing to the slowness of currents that are set up and the upper layers of water will presumably not have been much in contact with the reservoir bed and will consequently not contain so much

vegetable matter whilst the lower layers conversely will have longer in contact and contain more impurities. Further more in these lower layers the vegetable matter will probably be present more in the dissolved and colloidal than the suspended state and consequently more difficult to filter. It is I think a fact that the filter beds do not work as well in dry weather as in wet and the reason is, I think, as I have stated.

During the year no sample from the reservoirs or feeders showed signs of any harmful contamination the only impurities being vegetable in origin. It has always been my opinion that this supply without any filtering is absolutely safe for the town's supply. That this is so is I think shown by the fact that during the twelve years I have been in the Colony there has been no epidemic of disease that can be characterised as waterborne and during that period I should think at least 50 per cent. of the water sent into the town has been unfiltered. The advantages of filtering are that by removing the vegetable matter the water is clearer and is not liable to develop an odour or green and unsightly deposits on standing. However I do not think these advantages amount to much if after filtration unfiltered water is mixed with the filtrate.

The slow sand filter beds that are in use filter out the suspended and colloidal vegetable matter for varying periods depending on the character of the raw water the rate of filtration and also on the filter bed itself (presumably the way in which it has been constructed). At the end of this period the water still comes through clear but the vegetable matter reappears in the dissolved state. Filtering is then stopped and the filter bed is rested and cleaned.

As indicated above the filter beds vary considerably in their periods of efficiency. Those at Woodleigh yield a good filtrate for three or four days at a maximum. Those at Bukit Timah work much longer without resting, some give a good water for fifteen days. This is somewhat difficult to understand as the character of the raw water supplied is practically the same. It would appear to be more to do with the construction of the filter bed.

Samples from the service reservoirs at Pearls Hill and Mount Emily are analysed every day and in these samples more vegetable matter is found than in the filtered water as there has been an admixture of unfiltered water. The same characteristics are naturally found in water drawn from taps in various parts of the town. During the whole of the year no sample from a service reservoir or tap was found to be contaminated with sewage or any other harmful contamination showing that the water supply of the town is an excellent one from the health point of view.

Special analyses were made during the year of water from various taps where complaint had been made that the water smelt badly or was of bad colour. In all instances it was found to be due to the same cause namely that there was a poor draw-off from the tap in comparison with the length of pipe from the main, and consequently the water had remained in the enclosed pipe for some considerable time and the vegetable matter had undergone partial decomposition.

During the year the raw water supplies at Seletar have been tapped and since then samples have been analysed daily and have been proved to be satisfactory.

I append the results of chemical analysis of average sample of water from the two impounding reservoirs and an average sample of filtered water:—

				RESULTS EXPRESSED IN PARTS PER 100,000.		
				Thomson Road Reservoir	Kalang River Reservoir	Filtered Water
Total Solids	...	...	...	4.3	4.4	2.5
Total Organic Solids	...	...	...	2.5	2.8	0.9
Total Inorganic Solids	...	...	...	1.8	1.6	1.6
Suspended Organic Solids	...	...	...	1.4	1.9	0.2
Suspended Inorganic Solids	...	...	...	0.1	0.1	0.0
Dissolved Organic Solids	...	...	...	1.1	0.9	0.7
Dissolved Inorganic Solids	...	...	...	1.7	1.5	1.6
Chlorine	...	...	...	0.03	0.03	0.03
Free and Saline Ammonia	...	...	...	Absent	Absent	Absent
Albuminoid Ammonia	...	...	...	.009	0.010	0.0025
Nitrites	...	...	...	Absent	Absent	Absent
Nitrates	...	...	...	Absent	Absent	Absent
Oxygen absorbed in 15 mins at 84° F.				0.016	0.021	0.009
„	„	4 hours	...	0.061	0.079	0.024
Poisonous Metals	...	...	...	Absent	Absent	Absent
Iron	...	...	...	0.08	0.15	Slight Trace
Colour	...	...	...	Brownish	Brownish	None
Appearance in 2 ft. tube	...	...	...	Turbid	Turbid	Clear
Reaction	...	...	...	Neutral	Neutral	Neutral

III. Milks from Itinerant Vendors

807 samples were collected by the Sanitary Inspectors and handed to me for examination.

Analysis showed that 148 or 18.3 per cent. were adulterated. 144 or 17.8 per cent. were adulterated by the addition of water. One of these watered samples and four others making a total of five or 0.6 per cent. were adulterated by having less than the percentage of fat required.

The average adulteration for added water was 13.1 per cent. The average adulteration for the abstraction of fat was 20 per cent.

The following table classifies the percentage adulterations by the addition of water, for the year.

Between 70 per cent. and 60 per cent. of added water	...	2
„ 60 „ 50 „ „	...	4
„ 50 „ 40 „ „	...	2
„ 40 „ 30 „ „	...	12
„ 30 „ 20 „ „	...	13
„ 20 „ 10 „ „	...	27
„ 10 „ 4 „ „	...	36
Below 4 per cent. „ „	...	48

144

The following table shows how many samples have been taken during the past ten years, the percentage adulterated and the average adulteration.

—				Number	Percentage Adulterated	Average Adulteration
1911	...	...	...	334	36.5	22.5
1912	...	...	...	219	33.8	19.8
1913	...	...	...	456	19.7	20.0
1914	...	...	...	547	20.5	20.2
1915	...	...	...	490	24.9	19.1
1916	...	...	...	288	33.0	18.4
1917	...	...	...	118	78.8	21.35
1918	...	...	...	20	85.0	42.6
1919	...	...	...	396	26.8	—
1920	...	...	...	807	18.3	13.1

The number of samples taken was the largest for the ten years and the percentage adulterated and average adulteration was the lowest. The latter is to be expected as the more often samples are taken the more likely is the vender to keep up the purity of the milk.

IV. Sewages, Effluents etc. from Municipal Sewage Works

900 samples in all were received for analysis.

These consisted of 138 samples of Crude Sewage, 138 samples from the Sedimentation Tanks, 596 samples of Filter Bed Effluents and 28 of Sludge.

The crude sewage dealt with is a strong sewage. It is I think probably a much stronger sewage than that normally dealt with at home. However as the filter beds appear to perform their work properly and give a satisfactory effluent it is not necessary to attempt to introduce more diluting water.

A rough guide to the strength of a crude sewage may be obtained by taking the figure for oxygen absorbed at 80° F for four hours for example :—

Weak	=	7-8	parts	per	100,000
Average	=	10-12	„	„	„
Strong	=	17-25	„	„	„

Our crude sewage varies from 30-50 parts per 100,000 so it may be considered as a very strong sewage.

The passage of this crude sewage through the sedimentation tanks reduces very considerably the amount of albuminoid matter and oxygen absorbed figure and naturally the suspended matter. However the free and saline ammonia figure is not reduced and is often increased.

The sedimented liquid is then sprayed direct on to the coral filter bed, these deal with it in a very satisfactory manner, the good results being mainly due to the comparatively high temperature and the excellent nature of coral as a filtering medium.

It is important from a Public Health point of view that a stream or drain should not be polluted with a sewage effluent which might produce a nuisance. A great amount of work has been performed on sewage and their effluents by the officers of the Royal Commission on Sewage Disposal. In the 8th Report Vol. I of the Commission a standard is formulated, with which it is recommended that all effluent should comply before being poured into a stream. In the suggested standard a normal sewage effluent should not contain more than 3 parts per 100,000 of suspended matter and should not take up more than 2 parts per 100,000 of dissolved oxygen in five days. The report also discusses cases where, owing to the relatively small volume of any stream which receives the effluent, a more stringent standard is necessary, and on the other hand conditions of dilution which indicate that a relaxation of the normal standards may be allowed.

I see no reason why these standards should not be adhered to locally and it is satisfactory to note that the effluent from our Municipal Sewage Works passes these standards very consistently and very comfortably. At times the effluent approaches very closely the limits allowable but this is generally traceable to faults in the distributing system. When these are remedied the effluent recovers quickly.

At the commencement of the year samples taken at the fall showed a considerable deterioration in quality. This was due to the Humus Tanks and since these have been cleaned out and repaired the fall sample has been normal.

I append some typical results obtained during the year.

				RESULTS EXPRESSED IN PARTS PER 100,000		
				Crude Sewage	Sediment- ation Tank	Filter Effluent
Free Ammonia	...	...	...	7.22	9.60	0.36
Albuminoid Ammonia	...	...	...	15.55	1.58	0.18
Nitrites	...	...	...	Absent	Present	Present
Nitrates	...	...	...	Absent	Absent	Present
Oxygen absorbed in 3 mins.	...	...	...	16.74	2.89	0.31
Oxygen absorbed in 4 hours	...	...	...	40.15	7.21	0.63
Dissolved Oxygen absorbed in 5 days	...	...	...	—	—	1.12
Reaction	...	...	...	Alkaline	Alkaline	Alkaline
Suspended Matter	...	...	...	303.2	6.5	0.4
Organic Suspended Matter	...	...	...	274.4	5.7	0.4
Inorganic Suspended Matter	...	...	...	28.8	0.8	0.0

The following is a typical analysis of the samples of Sludge analysed:—

Free and Saline Ammonia	...	48.1 parts per 100,000
Albuminoid Ammonia	...	34.6 „ „
Oxygen absorbed in 3 mins.	...	187.2 „ „
Nitrites	...	Present
Nitrates	...	Present
Water	...	92.69 per cent.
Total Solids	...	7.31 „
Soluble Solids	...	0.13 „
Insoluble Solids	...	7.18 „
Total Organic Solids	...	4.91 „
Total Inorganic Solids	...	2.40 „
Soluble Organic Solids	...	0.02 „
Soluble Inorganic Solids	...	0.11 „
Insoluble Organic Solids	...	4.89 „
Insoluble Inorganic Solids	...	2.29 „

V. Sewages and Effluents from private installations

48 examinations were made and the results reveal that in practically every case the effluent is bad and putrescible and should not be allowed to be delivered into the public drains.

These bad results are in the main due to faulty construction of the system in the first place and secondly to lack of the necessary supervision after the system has been installed.

In many cases installations have been set up where they should never have been allowed. For instance there are cases where there has not been sufficient fall to allow for the proper depth of filtering medium.

In other cases the effluent is discharged into a drain which for a good proportion of the year is quite dry. Every effluent requires to be diluted with water containing dissolved oxygen and unless this is done it would be a very exceptional effluent that did not become putrescent.

In other instances the installation has not been properly constructed in the first place. There has been no proper distributor and granite has been used in place of coral. In other instances there have been holes in the sedimentation tanks which allow of the exit of the sewage direct into the drain instead of passing it through the filtering bed.

When I first visited installations there was in every case evidence of a total lack of the necessary supervision required to keep the plant in proper working order. Distributors were worn away or stuck, the sludge tank had never been cleaned out, the filter beds were choked up with leaves and twigs and in a good many cases ferns and young trees were growing in profusion. In some cases the beds were choked up with sludge and in others owing to the failure of the distributor the crude sewage was trickling through a passage in the bed that it had cut out for itself and was not being acted on in any way. The public appear to think that once an installation is set up it will keep itself in working order. This is far from being the case, the distributing system should be looked at every few days and the whole plant examined every few months. Other owners of plants were introducing large amounts of disinfectants with the sewage. A contact bed depends of course to a great extent on the virility of its nitrifying organisms and the introduction of even small amounts of disinfectant greatly impair its efficiency.

The results show that the private sewage installations of Singapore were in a very bad condition. Most of those in existence have now been repaired and the effluents are more or less satisfactory. However a strict watch will have to be kept so that they maintain this improvement. It must be remembered that in the majority of cases, the effluent meets with a very small volume of diluting water for some considerable distance and it is therefore indicated that the standards of the Royal Commission on Sewage Disposal should be more stringent.

VI. Air

An investigation was made of the C.O₂. content of houses in the Southern division of the town. It was undertaken to ascertain the comparative ventilation of Back to Back houses, Reinstated houses, and Reconstructed houses.

The investigations were carried out at midnight; the proportion of CO₂ in the street air was first ascertained and then the proportion on the various floors of the houses visited.

The results were embodied in a special report drawn up by Dr. Middleton.

VII. Flour

Six samples of flour of various brands were analysed. Microscopically they showed that they were not adulterated but the figures for cold water extract and acidity indicated that four of the six samples were of poor quality.

VIII. Butter

The water content of all samples was determined and in every case it was below the maximum limit of 16 per cent.

The fats were examined by the butyro-refractometer and the Reichert and Meissl figures taken. In every case the figures given showed that the fat was pure butter fat.

Five samples had a boron compound added as a preservative. In every case the amount was under the maximum limit of 0.5 per cent.

Two tinned samples were leaking and in these cases the butter had a cheesy smell. The sole object of tinning goods is to keep such articles which have presumably been sterilized out of contact with the surrounding air. Any leak in the tins allows the passage of harmful bacteria from the air to the contents and the whole object of tinning is lost. Any leaky tin is presumably then a bad one.

IX. Margarine

All samples contained below the maximum limit of moisture allowed and the fat was of good wholesome character.

X. Tinned Milk

The samples analysed were of three varieties, natural milk, condensed unsweetened, and condensed sweetened.

All the natural milks were up to the minimum standards required by the Ordinance, namely 3.25 per cent. of fat and 8.5 per cent. of solids not fat. No preservative was detected in any sample.

With regards to the condensed milks the samples in all but two cases, if diluted according to the directions given on the table, gave milks which were up to the standards of natural milk. In the two cases mentioned the vendors altered the dilution clause.

In one brand, a sample of each variety was sour and clotted. An examination of further tins of the same brand showed that they were badly tinned or sterilized. The vendors withdrew the supply from this market.

XI. Whisky

Samples were sent to me to analyse in order to discover if they were of the particular brand they purported to be on the label as suspicions had been aroused that a cheaper whisky had been substituted. A comparison of the analytical figures obtained with those obtained on an unopened bottle showed that in every case the suspicions were groundless.

All samples were up to the proper alcoholic strength.

XII. Aerated Waters

Six of the samples contained traces of lead and the majority of the sweetened samples contained Salicylic Acid as a preservative. I consider that the smaller manufacturers of aerated waters in Singapore turn out a very inferior article.

XIII. Sugar

All the samples examined were of good quality and contained at least 99.5 per cent. sucrose.

XIV. Beer

Examination of these samples were made to detect the presence of arsenic. In every case it was absent.

All the samples had sulphites added as a preservative. The amount present in every case was a comparatively small trace.

XV. Tinned Goods

The foods were analysed in order to detect if any traces of poisonous metal (tin and lead) had been absorbed by the goods from the can.

In all cases metallic impurities were absent and the goods were in sound condition.

XVI. Quinine Sulphate

Samples of Quinine Sulphate were bought at the various dispensaries.

Six of these were not up to the British Pharmacopoeial standards. One consisted entirely of cinchonine hydrochloride, two others contained this alkaloid to the extent of about 50 per cent. The other three impure samples contained excess of cinchona alkaloid other than quinine.

XVII. Samples from Engineer's Department

Samples of sea water, block tin and calcined shells were examined.

The interesting sample was the block tin which whilst purporting to be pure tin for making solder contained 57.5% of tin, the remainder being lead.

XVIII. Samples from Gas Department

Samples of coal, spent oxide, gas liquors and tar were analysed and special reports forwarded to the Gas Engineer.

XIX. Samples from Electrical Department

Samples of block tin and a deposit in earthenware pipes were analysed.

XX. Samples from Health Department

Ten samples of urine were examined qualitatively and when necessary quantitatively for the presence of sugar and albumen.

I have the honour to be,

Sir,

Your obedient servant.

A. G. HARRINGTON,

F.I.C., F.C.S.

Municipal Analyst.

MUNICIPAL HEALTH OFFICE,

SINGAPORE, *March 30th, 1921.*

To

THE MUNICIPAL HEALTH OFFICER,
SINGAPORE.

SIR,

I have the honour to submit my report for the year ending 31st December 1920, on the general condition and upkeep of the Municipal Markets, inspection of foodstuffs exposed for sale in them, and in the shops and stores within the Municipal confines. As I only took over duties in this Colony at the latter end of May, the report embraces the five months reports of the then Actg. Market Inspector, Mr. Glass, to whom I am greatly indebted for valuable assistance rendered during my first two months of office.

MUNICIPAL MARKETS

(a) Cleansing

With the exception of Rochore Market, which seems incapable of being made satisfactory clean, the Markets have been kept in a wholesome and sanitary condition throughout the year, the Market coolies attending to the cleansing of stalls, whitewashing and painting of same where and when necessary.

On Chinese New Year's day, the Annual cleansing was carried out as usual, with the assistance of the Mosquito gangs. During this process 1012 rats were caught and killed, many others escaping down the drains etc. during the removal of goods from stalls.

(b) Repairs

CLYDE TERRACE MARKET.

1. Railings in fish section repaired.
2. Granite landing steps replaced and re-set.
3. General repairs, colour-washing and provision of awnings etc. commenced in November and at end of year was not completed.

ELLENBOROUGH MARKET.

1. Pavement outside Manager's office repaired.
2. Drains and floors in all sections repaired.
3. Fourteen meat stalls recovered with zinc.
4. Zinc gutterings and downspouts renewed.
5. General painting and limewashing proceeding.

TELOK AYER MARKET.

1. Three beef and three pork stalls recovered with zinc and four wooden benches repaired.

2. Salt water service of fish section, taken up and relaid extending same to include New Hawker's shed. Stand-pipes altered accordingly.

KANDANG KERBAU MARKET.

Drains repaired three new awnings supplied and iron railings painted.

ORCHARD ROAD AND ROCHORE MARKETS.

Minor repairs to water and gas services only.

General Condition.—On the last day of the year I sent in a detail special report of repairs etc. still requiring attention, and if these can be put in hand and completed, the Market buildings would be in a very satisfactory state.

In August I had the large tree in Telok Ayer Market compound felled as a danger to adjacent Market property. This was carried out by the Engineers Department.

Rochore Market, which is an eyesore, has been commented upon in previous Annual Reports, but nothing has been done as yet to ameliorate its condition. The new Hawker's shed adjacent the Fish section at Telok Ayer Market was opened in August, and all hawkers who previously made use of the Market compound were allotted spaces in it. This shed much too small and poorly designed for its purpose, having no protection from weather. It is greatly used by the clerical staffs from town office during tiffin hours.

(c) Unsound foodstuffs

Just over 16,500 katis unsound foodstuffs were destroyed at the Municipal Cinerators from the Markets, giving a proportion of 17 of total foodstuffs passing through. The largest portion of this was unsound wet-fish, which following an old custom initiated by Mr. Cuckney is allowed to be surrendered before auction. It is gratifying to note that with more enlightenment and explanation as to what is good and bad the stall-holders are pleased to surrender on demand unsound articles. To quote an instance, in October at Clyde Terrace Market, a whole bullock was surrendered by owner. It was in a most emaciated condition, and wholly unmarketable, and on explanation the stall-holder made no demur. Of course, prosecution have been necessary, 105 vendors having been fined in all \$573 for exposing for sale unsound foodstuffs. The salutary fines imposed by the Magistrate in most cases have quite an exemplary effect.

(d) Foodstuffs

The quantity of foodstuffs passing through the Markets is well up to the average but their approximate value has increased 70% showing the increase in cost of living to good effect. The maximum however, seem, to have been reached and even a satisfactory decrease is remarked in certain commodities. Sugar, for instance, has now dropped to 24 cents per catty while beef and pork also show a few cents decrease per lb. Wet-fish, however, is subject to great variations in price, according to supplies. Below is a table showing the highest and lowest prices for principal articles of food throughout the year.

Articles				Highest price	Lowest price
Beef	...	...	...	\$0.50 per lb.	\$0.30 per lb.
Mutton	...	...	...	1.10 „	0.70 „
Pork	...	...	...	0.98 per catty	0.75 per catty
Coffee	...	...	...	0.65 „ „	0.52 „ „
Tea	...	...	...	1.15 per pkt.	0.65 per pkt.
Sugar	...	...	...	0.55 per catty	0.18 per catty
Salt	...	...	...	0.15 „ „	0.03 „ „
Potatoes	...	...	...	0.30 „ „	0.16 „ „
Yams	...	...	...	0.18 „ „	0.05 „ „
Onions	...	...	...	0.38 „ „	0.16 „ „
Geese	...	...	...	7.00 large each	5.00 large each
Ducks	...	...	...	\$26.00 per doz.	\$16.59 per doz.
Pigeons	...	...	...	1.80 per pair	1.00 per pair
Eggs Hens	...	...	...	1.80 per doz.	0.66 per doz.
Capons	...	...	...	1.80 per catty	1.05 per catty
Fowls	...	...	...	3.50 large each	1.40 large each

(e) Revenue

Market Collections					\$	cts.
Clyde Terrace	...	...	...	...	150,227	67
Ellenborough	...	...	...	...	156,251	27
Telok Ayer	...	...	...	...	44,692	88
Orchard Road	...	...	...	...	11,483	06
Kandang Kerbau	...	...	...	...	9,154	80
Rochore	...	...	...	...	7,556	30
				Total	...	\$379,365 98

At the latter end of September I made a slight rearrangement of stalls in Kandang Kerbau Market, thereby drawing more stall-holders into the Market. As will be seen by following table, this considerably increase receipts and reduced number vacant stalls by half.

Kandang Kerbau Market

			Receipt	Stall Occupied	Stall Vacant
January	...	...	\$372.90	58	51
February	...	...	306.15	57	50
March	...	...	378.65	58	48
April	...	...	390.80	61	44
May	...	...	397.45	62	47
June	...	...	392.00	63	45
July	...	...	407.45	63	45
August	...	...	449.75	67	35
September	...	...	460.50	75	35
October	...	...	572.80	84	18
November	...	...	552.00	91	19
December	...	...	571.20	91	18

F. Staff

The following shows number and disposal of the Market Staff, exclusive of managers and their kranis.

Market Keepers 6

Markets			Coolies	Watchmen
Clyde Terrace	...	...	18	3
Ellenborough	...	...	12	2
Telok Ayer	...	...	11	2
Kandang Kerbau	...	...	7	1
Orchard Road	...	...	4	1
Rochore	...	...	3	1

The Market Keepers have performed their Various duties in an able manner. Market Keeper Perreau took 14 days vacation leave from 31st August, to 14th September. I had occasion to dismiss two coolies, one from Orchard Road for causing a fight in the market, and one from Ellenborough, for continual neglect of duty. These have been replaced.

Market Bylaws

There were 111 prosecutions for breaches of the market bylaws. Heavier fines on offenders would be welcomed as the nominal fine of one dollar for obstruction, is looked upon in the light of a license to continue the offence.

In August I wrote the President to define power under M. B. II with regard to using firewood in the markets, which caused much disfigurement of market property. The Commissioners decided that charcoal only should be used (S.C.M.I. 3/9/20).

Eight prosecutions against stallkeepers were taken with the result that now, the smoke nuisance is practically non-existent.

Town

Town inspection has taken up quite a considerable portion of my time, large quantities of unsound foodstuffs having been destroyed from various firms who notify me when they have a load for the Cinerator. The auctioneers, whom I visited and explained that we would destroy free, unsound articles of food nearly all notify me now some days previous to sales. In one instance this was not done, and receiving complaints, I visited and seized over 8000 lbs. weight of hams which were subsequently condemned by the Health Officer. A special report was sent you on 28/9 and no prosecution was advised in this case.

I am rather handicapped in town inspection having to go alone, and having very little knowledge of the Chinese dialects. I have, however, seized the unsound foodstuffs exposed for sale and where able to obtain names prosecution have been instituted. A great deal more effective work could be done with the assistance of an interpreter. Hawkers give a great deal of trouble, and the sooner these can be collected in set places where supervision would be easier, the better for the health of the poorer classes, who are the chief purchasers from these itinerants. The practice of hawking meat and other comestibles, uncovered, in the streets, is most insanitary, flies and dust having easy access. All these licensees should be made to provide covered baskets under penalty of losing their license.

In conclusion, I wish to thank you, Sir, for your co-operation in doubtful cases, Mr. Cuckney for his sound and able advice, and all other officials who have rendered me ready assistance during my first period of duty.

I attach summary of prosecutions undertaking, tables of unsound foodstuffs destroyed, and a return of foodstuffs passing through the markets.

I have the honour to be,

Sir,

Your obedient servant.

M. N. MACMAHON,

Food and Market Inspector.

SUMMARY OF PROSECUTIONS FOR THE YEAR ENDING 31st DECEMBER, 1920

MONTH	MUNICIPAL ORDINANCE 1913		Market Bylaws	Total Cases	Total Convictions	Total Postponed	Total Withdrawn	Total Warrants	Total Fines
	Section 180	Section 176							
January	2	—	6	8	5	3	—	—	32.00
February	4	—	10	14	11	1	2	—	58.50
March	2	2	2	6	6	—	—	—	23.50
April	7	—	9	16	15	—	1	—	122.00
May	7	—	2	9	7	2	—	—	67.00
June	14	—	4	18	11	7	—	—	74.00
July	1	—	7	8	7	1	—	—	15.00
August	13	—	9	22	19	—	3	—	87.00
September	14	—	25	39	35	1	3	—	76.50
October	—	—	8	8	6	—	2	—	13.00
November	9	—	16	25	16	3	6	—	53.00
December	32	—	13	45	40	—	5	—	166.00
	105	2	111	218	178	18	22	—	787.50

M. N. MACMAHON,

Food and Market Inspector.

RETURN OF FOODSTUFFS PASSING THROUGH MARKETS DURING 1920

MARKETS	Wetfish ccts.	Boiled fish ccts.	Shell fish ccts.	Beef ccts.	Mutton ccts.	Pork ccts.	Fowls	Capon	Geese	Pigeons	Ducks	Tur- key	Bean cakes ccts.	Bean sprouts ccts.	Wet- prawn ccts.	Approximate Value
																\$ cts.
Clyde Terrace ...	3,763,097	71,612	51,554	658,103	11,017	335,748	66,085	—	308	—	26,126	—	386,634	40,995	18,908	2,508,413 68
Ellenborough ...	4,007,766	48,458	242,720	27,869	—	659,014	31,626	15,479	2,348	—	49,579	—	—	—	—	2,900,231 50
Telok Ayer ...	453,066	24,762	82,340	38,896	24,395	337,454	37,269	—	306	6,628	23,796	63	—	—	—	581,030 63
K. Kerbau ...	150,752	3,168	—	47,765	18,399	150,525	1,037	—	—	—	4	—	—	—	—	258,917 67
Rochore ...	No record of weight kept wetfish only.															15,074 00
	8,374,681	148,000	376,614	772,633	53,811	1,481,741	136,017	15,479	3,059	6,628	99,505	63	386,634	40,995	18,908	6,263,667 48

(61-D)

M. N. MACMAHON,
Food and Market Inspector.

RETURN OF NOTICES SERVED AND COMPLIED WITH ETC., DURING THE YEAR 1920

Nature of Notice	Brought forward from last year	Served during the year	Total	Complied with during the year	Carried forward to next year	REMARKS
Nuisance ...	364	1,837	2,201	1,898	303	
Drain ...	18	55	73	70	3	
Latrine ...	21	49	70	65	5	
Limewash ...	3,025	5,596	8,621	6,716	1,905	
Well ...	3	8	11	11	...	
Intimations ...	...	147	147	78	* 62	* 7 Intimations cancelled for nuisance notices
Total ...	3,431	7,692	11,123	8,838	2,278	

A. J. CUCKNEY,
Chief Sanitary Inspector.

RECAPITULATION

Selling milk without licence	...	...	...	26
Selling vegetable within 50 yards of Market	...	...	...	1
Failing to carry licence (milk-seller)	...	...	...	7
Night soil cart improperly covered	...	...	...	1
Receiving night-soil from a place other than that specified	...	...	...	1
Refusing to comply with a demand made by a Municipal Officer				1
				37

RETURN OF LICENSES (OFFENSIVE TRADES) ISSUED DURING THE YEAR 1920

Nature of License	Number issued	Fee	Amount	REMARKS
		\$ cts.	\$ cts.	
Blachan	9	24 00	204 00	I at 6 months
Dye House	11	12 00	132 00	
Fish Curing	...	36 00	...	
Fruit Preserving	8	50 00	400 00	
Offal Boiling	4	12 00	48 00	
Rags and Bones	1	6 00	6 00	
Sago Factory	7	50 00	350 00	
Sheep or Goat Stables	3	12 00	36 00	
Tannery	17	50 00	850 00	
Knacker's Yard or place for skinning or disembowelling animals	1	12 00	12 00	
Stables, Cattlesheds, etc.—				
9 horses or cattle or under, per head	811	1 00	2,328 00	
10 to 14 horses or cattle	15	10 00	150 00	
15 to 24 do.	22	15 00	330 00	
25 to 50 do.	17	25 00	425 00	
Over 50 do.	13	50 00	650 00	
Lye making	...	12 00	...	
Drying and sorting Fish	5	12 00	60 00	
Storing Fish	...	...	...	
Piggery:—				
100 square feet	1,198	0 50	599 00	
200 "	567	1 00	567 00	
300 "	251	1 50	376 50	
400 "	273	2 00	546 00	
500 "	141	2 50	352 50	
600 "	142	3 00	426 00	
700 "	57	3 50	199 50	
800 "	78	4 00	312 00	
900 "	36	4 50	162 00	
1,000 "	49	5 00	245 00	
1,100 "	17	5 50	93 50	
1,200 "	17	6 00	102 00	
1,300 "	6	6 50	39 00	
1,400 "	14	7 00	98 00	
1,500 "	7	7 50	52 50	
1,600 "	5	8 00	40 00	
1,700 "	4	8 50	34 00	
1,800 "	2	9 00	18 00	
1,900 "	3	9 50	28 50	
2,000 "	7	10 00	70 00	
2,200 "	2	11 00	22 00	
2,600 "	1	13 00	13 00	
2,800 "	1	14 00	14 00	
3,100 "	1	15 50	15 50	
4,500 "	1	22 50	22 50	
Total	3,824		\$10,429 00	

A. J. CUCKNEY,

Chief Sanitary Inspector.

RETURN OF ARREST CASES DURING THE YEAR 1920—continued

Date	Name	Address	By whom Arrested	Offence	By whom Tried	Result	Remarks
31/8	Purmal ...	859 Serangoon Road ...	Accompd. Insp. Dean to P. Stn.	Selling milk without licence ...	2nd Magistrate	B.f. 125	
17/8	Manikam ...	Ann Siang Hill ...	Accompd. Insp. Klass to P. Station	Do. ...	"	Fined \$15	
29/8	Sado Singh ...	80 Dunlop Street ...	Accompd. Insp. Pestana to P. Station	Do. ...	3rd Magistrate	" 25	
29/8	Ramah Singh ...	43 Kinta Road ...	"	Failing to carry his licence ...	2nd Magistrate	" 15	
3/9	Beer ...	Mc. Pherson Road ...	Accompd. Brett to P. Station	Selling milk without licence ...	"	" 3	
"	Enadan ...	Do. ...	"	Do. ...	"	" 10	
25/9	Tanappan ...	River Valley Road ...	"	Do. ...	3rd Magistrate	" 10	
"	Chayvoo ...	Holland Road ...	"	Do. ...	"	" 25	
25/9	Partaph ...	80 Dunlop Street ...	Accompd. Insp. Brett to P. Station	Do. ...	"	" 3	
21/10	Koh Ah Yong	...	Accompd. Insp. C.A. de Souza to P. Station	Nightsoil Cart improperly covered	2nd Magistrate	" 25	
22/10	Koh Gin ...	...	"	Receiving nightsoil from a place other than that specified	"	" 10	
26/10	Manikam ...	250 Pasir Panjang ...	P.C. 799 ...	Selling milk without licence ...	3rd Magistrate	" 5	
9/11	Bailloo ...	Anderson Road ...	P.C. 25 ...	Do. ...	2nd Magistrate	" 25	
						" 7	
						C.f. 303	

RETURN OF ARREST CASES DURING THE YEAR 1920—continued

Date	Name	Address	By whom Arrested	Offence	By whom Tried	Result	Remarks
9/11	Baboo Ram ...	1034 Serangoon Road ...	Accompd. Insp. C.A. de Souza to P. Station	(1) Selling milk without carrying his licence (2) Refusing to comply with the demand made by a Municipal Officer	2nd Magistrate	B. f. 303 Fined \$15	
16/12	Napal ...	10 Mc. Pherson Road ...	Accompd. Insp. O. Phillips to P. Station	Failing to carry his Licence ...	3rd Magistrate	" 5	
"	Govinda ...	21 Bajerei Lane ...	" "	Selling milk without licence ...	"	" 7	
"	Pathee Parmal ...	33 Mc. Pherson Road ...	" "	Do. ...	"	" ...	Discharged
"	Baltoo Singh ...	145 Syed Alwee Road ..	" "	Failing to carry his licence ...	"	" 4	
20/12	Situath Singh ...	145 Syed Alwee Road ...	Accompd. Insp. C.A. de Souza to P. Station	Do. ...	"	" 25	
20/12	Jagee Singh ...	79 Dunlop Street ...	" "	Refusing to comply with a demand made by a Municipal Officer	"	" 100	
28/12	Paraghn ...	4 Birch Road ...	" "	Selling milk without licence ..	"	" 5	
17/12	Cheblal Singh ...	18 Dhoby Ghaut ...	Accompd. Insp. Pestana to P. Stn.	Do. ...	"	" 7	
21/12	Ramdeo Singh ...	12 Mc. Pherson Road ...	" "	Do. ...	"	" 25	
						\$496	

A. J. CUCKNEY,
Chief Sanitary Inspector.

MIDDLETON HOSPITAL,
SINGAPORE, 10th February, 1921.

To

THE MUNICIPAL HEALTH OFFICER.

SIR,

I have the honour to forward the following report for the year 1920.

The following table gives a summary of cases treated at Middleton Hospital during the year:—

Diseases			Remaining at the beginning of the year	Admitted during the year	Total treated	Discharged	Died	Absconded	Total remaining
Cholera	...	...	1	8	9	2	7	...	...
Plague	...	...	...	30	30	6	24	...	...
Small-pox	...	...	...	3	3	2	1	...	...
Cerebro-spinal fever	...	...	1	27	28	5	19	1	3
Chicken pox	...	...	...	39	39	39	...	...	...
Diphtheria	...	...	1	15	16	13	2	...	1
Measles	...	...	...	3	3	3	...	...	...
German measles...	...	...	...	1	1	1	...	...	...
Influenza	...	...	...	14	14	12	1	...	1
Mumps	...	...	...	1	1	1	...	...	...
Erysipelas	...	...	...	1	1	1	...	...	...
Other diseases	...	...	...	40	40	29	10	1	...
Total			3	182	185	114	64	2	5

At the end of 1919 there were three patients in Hospital viz. 1 cholera, 1 cerebro-spinal fever and 1 diphtheria.

During the year there were 182 admissions.

Cholera.—Of the 9 cases treated in hospital during the year two were discharged and seven died. Three of the deaths occurred within 24 hours of admission to hospital.

Plague.—There were 30 plague admissions of which 24 died and 6 recovered. Of the deaths 10 occurred within 24 hours of admission and 3 within 48 hours.

Twenty-nine cases were of the bubonic type and one case of the septicæmic type.

Small-pox.—There were 3 admissions during the year.

Two cases were of the confluent type and one of the modified type. The mild case showed good vaccination marks, one confluent case showed no vaccination marks, and the second confluent case showed doubtful marks. One of the confluent cases died.

Cerebro-spinal Fever.—There were 27 admissions during the year, and of these 5 were discharged, 19 died and one absconded. The absconding case was found next day and returned to Hospital to complete his convalescence.

There appears to be a considerable increase of recent years in the incidence of this disease in Singapore. Previous hospital returns show 5 admissions in 1917 none in 1918 and 14 in 1919. The cases have been widely scattered throughout the community and no two cases could be connected with any common source of infection. Overcrowding is the factor which is the primary predisposing cause of infection.

The mortality from the disease in hospital has been a heavy one but this is likely to become much less when cases are recognised and sent for treatment at an earlier stage.

Eleven of the hospital cases died within 24 hours of admission and 5 within 48 hours of admission.

Diphtheria.—There were 15 cases admitted during the year, of which 13 recovered and 2 died.

Other diseases.—Forty cases sent in as cases of suspected infectious disease] were found on observation to be suffering from the following diseases :—

Pneumococcal meningitis 3, Malignant malaria 3, Syphilis 3, Pyæmia 2, Bacillary dysentery 2, Chronic amoebic dysentery 2, Tonsillitis 2, Ankylostomiasis 2, Prickly heat 1, Urticaria 1, Pemphigus 1, Couyza 1, Gonorrhoea 1, Entritis 1, Boil 1, Gastroentritis 1, Admitis of groin 1, Cellulitis of thigh 1, Diarrhoea 1, Pulmonary tuberculosis 1, Ascaris infection 1, Puerperal insanity 1, Impetigo 1, Gastritis 1, Debility 1, Miliary tuberculosis 1, Pneumonia 1, Dengue 1, Insect bites 1.

Of these cases, 10 died and the remainder were discharged or transferred to Tan Tock Seng Hospital. The deaths occurred from the following diseases :—Miliary tuberculosis 1, pyæmia 1, Pneumococcal meningitis 2, Dysentery 3, Gastro-entritis 1, Malignant malaria 1, and pulmonary tuberculosis 1.

Since the hospital was opened the following cases have been admitted:—

	1913 6 months	1914	1915	1916	1917	1918	1919	1920
Cholera ...	32	126	4	...	2	...	45	8
Small Pox ...	1	13	12	70	30	10	11	3
Plague ...	...	5	16	11	26	66	7	30
Chicken Pox ...	...	...	...	95	35	28	18	39
Diphtheria ...	...	...	...	...	3	1	2	15
Cerebro-spinal Fever ...	...	...	...	...	5	...	14	27
Influenza ...	...	...	...	...	...	70	23	14
Other diseases ...	9	48	21	28	19	34	55	46
Total ...	42	192	53	204	120	209	175	182

Staff

Dr. de Cruz returned to Government service in June and Dr. W. Dawson assumed the duties of Medical Superintendent.

Mr. C. W. Francis took over the duties of Hospital Assistant in March, vice Mr. Danker.

Mr. F. W. Nonis took over the duties of Steward in May vice Mr. F. W. Curren resigned.

Mr. Toft, Matron, left for home on furlough in June, 1920 and the acting matronship has been shared in turn by the 3 Municipal Nurses resident at the Hospital.

Buildings and Compound

The new Doctors' quarters were completed during the year. One new quarter has been added to the Nurse's Bungalow.

The new Cholera ward is in process of building.

All the Hospital buildings have been repainted and whitewashed and many minor repairs carried out.

I have the honour to be,

Sir,

Your obedient servant.

W. DAWSON,

Medical Superintendent.

Middleton Hospital.

MUNICIPAL HEALTH OFFICE.

ABSTRACT REPORT OF THE INSPECTORS OF NUISANCES FOR THE YEAR 1920, SHOWING NUMBER OF PROSECUTIONS, CONVICTIONS, AND AMOUNT OF FINES IN EACH DISTRICT

OFFENCES.	DISTRICT I.				DISTRICT II.				DISTRICT III.				DISTRICT IV.				DISTRICT V.				DISTRICT VI.				DISTRICT VII.				DISTRICT XV.				DISTRICT XVI.				TOTAL.				
	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.					
Filthy houses, accumulation of rubbish and drains in bad order	1,560	21	19	\$ 57	5,107	73	71	\$ 241	5,418	80	74	\$ 318	4,517	67	65	\$ 260	6,129	104	100	\$ 436	6,967	51	46	\$ 160	5,788	75	70	\$ 353	5,686	47	47	\$ 183	2,996	3	3	\$ 10	44,168	521	495	\$ 2,018	cts.
Allowing night-soil to accumulate on the premises.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	4	3	15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	4	3	15	..	
Using night-soil as manure	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	10	..	..	..	..	..	..	6	6	6	45	2	2	2	30	9	9	9	85	..			
Obstruction in public thoroughfares, verandahs and drains	..	28	20	89	..	41	39	151	..	16	14	43	..	36	36	158	..	8	5	16	..	34	32	116	..	63	57	219	..	34	31	174	..	..	..	..	..	260	234	966	..
Non-compliance with notices	..	..	..	..	117	117	114	114	56	56	56	115	61	61	2	10	72	72	66	85	120	120	119	314½	147	147	145	220	30	30	23	10	2	2	2	5	605	605	527	873	50
Non-compliance with nuisance order	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	0	..	..	..	..	..	..	1	1	1	..	..		
Carrying on offensive trades without a license	1	1	1	15	..	..	..	..	..	..	..	..	1	1	1	5	4	4	4	16	4	4	4	11	6	6	4	37	33	33	31	248	5	5	5	34	54	54	50	366	..
License not exhibited	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Adulteration of milk	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	75	..	5	5	305	..	..	..	..	..	6	6	380	..	
Cases of unwholesome food	..	..	..	..	..	..	..	..	..	2	2	42½	..	16	11	89	..	..	..	..	..	1	1	5	..	..	..	..	..	..	..	..	..	..	..	..	19	14	136	50	
Offences in connection with public markets	..	..	..	..	..	..	..	..	..	..	..	..	..	18	16	26	..	..	..	..	..	33	32	79	..	..	..	..	..	..	..	..	..	..	..	..	51	48	105	..	
Failing to report infectious Disease	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Breaches of the Dairy By-laws	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	15	..	2	2	28	..	..	..	..	..	5	5	37	..	..	..	..	..	9	8	80	..	
Breaches of the Vaccination Regulations	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	0	..	1	1	..	..	..	..		
Breaches of the Registration of Births and Deaths Ordinance	..	..	..	..	..	1	1	0	..	..	..	..	..	1	1	0	..	1	1	0	..	..	..	..	..	..	..	..	..	..	2	1	0	..	5	4	..	..	..		
Breaches of Regulations for control of stables, cattle sheds, etc.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	2	..	..	..	..	2	2	2	19	94	94	90	268	2	2	2	4	99	99	95	293	..	
Breaches of By-laws for the control of Bakeries	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Breaches of By-laws for the control of Dhobies	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Breaches of the Hawkers By-laws	..	177	134	319	..	233	198	546	..	252	210	448½	..	148	117	232½	..	545	481	1,136½	..	229	201	464	..	267	241	503½	..	230	196	393	..	..	..	..	2,081	1,778	4,040	..	
Breaches of By-laws for the control of Sick Receiving Houses	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Breaches of By-laws for the control of Coffee Shops and Eating Houses	1	1	1	3	..	..	..	..	..	..	..	..	1	1	1	0	2	2	2	6	10	10	8	28	5	5	5	14	5	5	5	13	2	2	2	4	26	26	24	68	..
Breaches of Regulations for control of Theatres	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Night-soil Cart improperly covered	..	..	..	..	..	5	5	24	..	2	2	10	..	5	5	17	..	5	5	23	..	1	1	3	..	1	1	2	..	..	..	..	..	..	..	..	19	19	79	..	
Allowing premises to be overcrowded	..	..	..	..	..	..	..	..	..	..	..	..	2	2	1	15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	1	15	..			
Selling vegetables within 50 yards of Market	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	6	..		
Breaches of the Conservancy By-laws	..	2	1	10	..	2	0	0	..	..	..	..	..	..	..	..	13	5	30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	17	6	40	..			
	1,562	230	176	493	5,224	472	428	1,073	5,474	403	358	977	4,582	358	258	818½	6,213	762	675	1,790½	7,101	435	446	1,208½	5,948	567	526	1,442½	5,855	490	440	1,676	3,009	19	18	87	44,963	3,791	3,325	9,566	..
NOTE.—Costs are not included in the " Amount of Fines."																														63,676				3,023	2,607	13,008	..				
GRAND TOTAL ..																														108,644				6,814	5,932	22,574	..				

A. J. CUCKNEY,
Chief Sanitary Inspector.

MUNICIPAL HEALTH OFFICE.

ABSTRACT REPORT OF THE INSPECTORS OF NUISANCES FOR THE YEAR 1920, SHOWING NUMBER OF PROSECUTIONS, CONVICTIONS, AND AMOUNT OF FINES IN EACH DISTRICT

OFFENCES.	DISTRICT VIII.				DISTRICT IX.				DISTRICT X.				DISTRICT XI.				DISTRICT XII.				DISTRICT XIII.				DISTRICT XIV.				DISTRICT XVII.				DISTRICT XVIII.				TOTAL.				
	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	No. Inspected.	No. Prosecuted.	No. Convicted.	Amount of Fines.	
Filthy houses, accumulation of rubbish and drains in bad order	8,004	175	168	\$ 807	8,415	33	33	\$ 153	8,905	19	19	\$ 97	6,099	67	62	\$ 330	6,889	142	137	\$ 533	9,818	97	94	\$ 452	5,504	49	46	\$ 187	4,682	17	16	\$ 68½	4,599	29	25	\$ 182	62,915	628	600	\$ 2,809	cts. 50
Allowing night-soil to accumulate on the premises.	..	..	..	..	..	..	..	..	1	1	1	3	..	..	..	..	..	..	..	1	1	1	3	..	..	..	..	1	1	1	3	..	..	..	..	3	3	3	9	..	
Using night-soil as manure	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	4	4	30	27	27	27	262	31	31	31	292	..		
Obstruction in public thoroughfares, verandahs and drains	..	11	11	48	..	10	10	52	..	35	33	129	..	31	30	166	..	21	18	111	..	3	3	12	..	65	56	291	..	1	1	2	..	..	..	..	..	177	162	811	..
Non-compliance with notices	83	83	81	188	24	24	24	54	32	32	30	15	47	47	39	65	129	129	126	186½	13	13	13	35	60	60	58	115	6	6	5	10	39	39	37	40	433	433	413	708	50
Non-compliance with nuisance order	..	..	..	..	..	..	..	..	1	1	1	0	..	..	..	..	..	..	..	..	..	..	..	3	3	3	0	..	..	..	..	..	..	..	..	4	4	4	..	..	
Carrying on offensive trades without a license	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	2	15	..	..	..	..	20	20	17	31	26	26	17	149	48	48	36	195	..	
License not exhibited	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	2	2	3	3	3	14	5	5	5	16	..	..		
Adulteration of milk	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	35	35	2,350	..	2	2	100	..	2	2	175	..	17	16	1,045	..	56	55	3,670	..		
Cases of unwholesome food	..	..	..	..	..	..	..	..	..	40	36	308½	..	..	..	..	..	1	1	2	..	17	16	155½	..	13	10	37	..	..	..	..	..	..	..	..	71	63	503	..	
Offences in connection with public markets	..	..	..	..	..	..	..	..	..	52	50	71	..	..	..	..	..	1	1	2	..	1	1	4	..	1	0	0	..	..	..	..	..	..	..	..	55	52	77	..	
Failing to report infectious Disease	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	25	1	1	1	25	..		
Breaches of the Dairy By-laws	..	1	1	5	..	..	..	..	..	..	..	..	..	5	5	73	..	..	..	..	..	19	15	149	..	3	2	27	..	7	6	36	..	5	3	31	..	40	32	321	..
Breaches of the Vaccination Regulations	..	7	4	0	..	1	0	0	..	3	1	0	..	..	..	..	..	9	5	5	..	4	3	0	..	4	3	0	..	2	2	0	..	2	2	0	..	32	20	5	50
Breaches of the Registration of Births and Deaths Ordinance	..	1	1	0	..	..	..	..	..	2	2	0	..	..	..	..	..	..	..	..	..	..	..	..	3	2	0	..	2	2	½	..	..	..	..	..	8	7	..	50	
Breaches of Regulations for control of stables, cattle sheds, etc.	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	7	..	..	..	..	6	6	6	32	..	..	..	..	163	163	158	715½	25	25	19	64	195	195	184	818	50
Breaches of By-laws for the control of Bakeries	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	2	34	..	..	..	..	..	..	..	..	..	..	..	..	2	2	2	34	..	
Breaches of By-laws for the control of Dhobies	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Breaches of the Hawkers By-laws	..	191	147	364½	..	351	260	751	..	120	109	318	..	163	130	246½	..	74	50	147	..	7	7	16	..	207	146	316½	..	8	5	5	..	55	40	89	..	1,176	894	2,253	50
Breaches of By-laws for the control of Sick Receiving Houses	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Breaches of By-laws for the control of Coffee Shops and Eating Houses	2	2	2	5	1	1	1	3	10	10	6	12	10	10	9	27	5	5	3	9	1	1	1	3	3	3	2	6	1	1	1	5	4	4	3	11	37	37	28	81	..
Breaches of Regulations for control of Theatres	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Night-soil Cart improperly covered	..	2	2	10	..	..	..	..	..	..	..	..	..	4	3	18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	5	28	..	
Allowing premises to be overcrowded	..	..	..	..	..	..	..	..	..	..	..	..	2	2	2	40	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	2	40	..		
Breaches of the Conservancy By-laws	..	..	..	..	..	..	..	..	..	..	..	..	..	7	2	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	2	10	..		
Breaches of the Food and Drugs Regulations	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	4	175	..	..	..	..	..	1	1	25	..	1	1	100	..	6	6	300	..	
	8,089	473	417	1,427½	8,440	420	328	1,013	8,949	315	288	953½	6,159	337	283	982½	7,023	382	341	995½	9,843	212	203	3,435½	5,570	413	330	1,080	4,779	237	223	1,108½	4,724	234	194	2,012	63,676	3,023	2,607	13,008	..
NOTE.—Costs are not included in the “Amount of Fines.”																																					44,968	3,791	3,325	9,566	..
GRAND TOTAL ..																																					108,644	6,814	5,932	22,574	..

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